

ExamWise
VOLUME 2

CFA 2008 Level I Certification:

**The Candidates 500 Question
Concept Check Q & A Workbook For
Chartered Financial Analyst**

**FREE Download
Test Engine With
Mock Practice Exams**



Jane Vessey, CFA
M. Afdal Pamilih, CFA
David Stewart

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ExamWise®

Volume 2

CFA 2008 Level I Certification

**The Candidates 500 Question
Concept Check Q & A Workbook
For Chartered Financial Analyst**



Authors

Jane Vessey, CFA

M. Afdal Pamilih, CFA

David Stewart

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This book is dedicated to our fantastic children Adam and Julia who we love very much.

Lane Vessey & M. Afdal Pamilih

This Study Guide is dedicated to the widow(er)s and orphans of the “Silent Spring”. Those who have sacrificed loved ones to the obscurity of quiet study and endured weekend sacrifice above and beyond the call of continuing education. On the alter of a profession’s highest accreditation these unsung heroes have sacrificed time with their spouse, shopping with Mom, and pitch and catch with Dad. These patient supporters have endured tense attitudes, unfinished chores, extra duties, and received the respect and appreciation of all who have studied throughout the “Silent Spring”.

In particular, never ending thanks to:

Carol Lee, Mary Elizabeth, Sophia Victoria, David Todd II

David Stewart

ExamWise®

Volume 2:

CFA 2008 Level I Certification:

**The Candidates Question And Answer Workbook
For Chartered Financial Analyst**

BY

Authors

Jane Vessey, CFA

M. Afdal Pamilih, CFA

David Stewart

Jane Vessey

Jane Vessey manages a training company in the United Kingdom specializing in financial analysis and investment. She is a visiting lecturer at Cass Business School teaching classes in asset management and valuation. She also teaches a CFA® revision course at ISMA (the business school at Reading University) and is an associate at a leading London financial training company where she teaches courses covering investment management and related topics. She has developed online training programs for students taking the CFA examinations and teaches CFA courses for UKSIP (the UK Society of Investment Professionals).

Jane graduated in Mathematics from Oxford University, United Kingdom, and is a CFA charter holder. She has some eighteen years experience working in the investment industry, starting out as an equity analyst before becoming an investment manager. She was based in London and Tokyo and took responsibility for managing equity portfolios invested in the Japanese and other Asian markets. In 1990, Jane moved to Indonesia and established and ran an investment management operation on behalf of Mees Pierson. She took responsibility for all areas of the business, including investment, operations, marketing and administration. While in Asia, Jane was involved in providing training to capital market participants and state officials and teaching in courses provided by local universities.

M. Afdal Pamilih

Afdal has 18 years' experience working in the finance industry. He started his career with J.P. Morgan, and then with County NatWest Government Securities, in New York specializing in the development of quantitative products for foreign exchange and fixed income markets. After returning to Indonesia in 1989 he was responsible for the development of investment services and subsequently treasury management for leading banks in Jakarta.

Afdal has developed web-based training programs for the CFA examinations and has wide teaching experience, including instructing at the School of Management, University of Surrey, United Kingdom.

He obtained a MSc in Mathematics from the University of Texas at Arlington and holds the Chartered Financial Analyst ("CFA") qualification.

David Stewart:

David Stewart has extensive experience in venture capital and business structural reorganizations. As president of a private client broker dealer firm, he has business valuation and project valuation experience on the venture capital side and portfolio management on the asset management side. His analysis, commentary, books, and study guides have appeared in the financial management, securities, and exam prep industries.

David has collaborated with experts in the field to produce the 2001 through 2006 editions of this study guide. His extensive research into the CFA exam program and past exam histories, field work, and consistent review of CFA Institute information allows him and his co-authors to deliver high quality and up to date information.

About the Book:

The CFA® designation is increasingly becoming a pre-requisite for getting – or keeping – a job. Each year, more people are sitting for the exam, and the pass rates have been declining. No question, the examiners are making the test tougher, because they want to maintain the value of the designation. By purchasing this workbook, you've shown a desire to want to be in the minority that passes.

The CFA® exam is a pass/fail test. I've taken a lot of pass/fail tests – two bar exams (New York and New Jersey), the CFP® and the three levels of the CFA® -- and I realize that there is one underlying premise to success: The key is: **“If you study, you pass.”** It's that simple. But “studying” doesn't imply merely a cursory once-over reading. It means a level of preparation as though you wanted to receive the highest grade in CFA® history, even though it doesn't matter whether you pass by a lot or a little.

The CFA® exam covers a lot of material, as you've discovered. With so much material, the instinct for many is to try to read it as carefully as possible on the first go-round, because the prospect of actually having to read it *again* is pretty daunting. We wanted to offer workbook of Q&A materials that follows the Learning Outcome Statements, because those are what you'll be responsible for knowing for the test. Good Luck!

The 18 2008 CFA Level I Study Sessions breakout is as follows:

Ethical and Professional Standards

1. Study Session 1: Ethical and Professional Standards

Investment Tools

2. Study Session 2. Quantitative Methods: Basic Concepts
3. Study Session 3. Quantitative Methods: Application
4. Study Session 4. Economics: Microeconomic Analysis
5. Study Session 5. Economics: Market Structure and Macroeconomic Analysis
6. Study Session 6. Economics: Monetary and Fiscal Economics
7. Study Session 7. Financial Statement Analysis: Introduction
8. Study Session 8. Financial Statement Analysis: Income Statement, Balance Sheet, Cash
9. Study Session 9. Financial Statement Analysis: Inventories, Assets, Taxes, and Debt
10. Study Session 10. Financial Statement Analysis: Techniques, Apps, & International
11. Study Session 11. Corporate Finance

Portfolio Management

12. Study Session 12. Portfolio Management

Asset Valuation

13. Study Session 13. Analysis of Equity Investments: Securities Markets
14. Study Session 14. Analysis of Equity Investments: Industry and Company Analysis
15. Study Session 15. Analysis of Fixed Income Investments: Basic Concepts
16. Study Session 16. Analysis of Fixed Income Investments: Analysis and Valuation
17. Study Session 17. Derivative Investments
18. Study Session 18. Alternative Investments Equity Investments: Securities Markets

2008 JUNE EXAM

15 February 2008 Second deadline for new CFA Program enrollments and exam registrations to be received by CFA Institute

March 2008 Online sample exams available

17 March 2008 Final deadline for new CFA Program enrollments and exam registrations to be received by CFA Institute

17 March 2008 Final deadline for disability accommodation requests and requests for religious alternative dates to be received by CFA Institute

17 March 2008 All test center change requests must be received by CFA Institute

Late April 2008 Exam admission tickets available online

7 June 2008 Exam date and **8 June 2008** Exam date in Eastern Asia and Oceania

June-July 2008 Exams graded

Late July 2008 Exam results available online for Level I candidates

Late August 2008 Exam results available online for Level II and III candidates

2008 DECEMBER EXAM

17 March 2008 First deadline for new CFA Program enrollments and exam registrations to be received by CFA Institute

15 August 2008 Second deadline for new CFA Program enrollments and exam registrations to be received by CFA Institute

15 September 2008 Final deadline for new CFA Program enrollments and exam registrations to be received by CFA Institute

15 September 2008 Final deadline for disability accommodation requests and requests for religious alternative dates to be received by CFA Institute

15 September 2008 All test center change requests must be received by CFA Institute

October 2008 Online sample exams available

Late October 2008 Exam admission tickets available online

6 December 2008 Exam date and **7 December 2008** Exam date in Eastern Asia and Oceania

December 2008 Exams graded

January 2009 Exam results available online

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2. CFA Program: <http://www.cfainstitute.org/cfaprogram>

3. The Code of Ethics (Full Text) <http://www.cfainstitute.org/centre/ethics/code/>

The Standards of Professional Conduct

Standard I: Fundamental Responsibilities

Standard II: Relationships with and Responsibilities to the Profession

Standard III: Relationships with and Responsibilities to the Employer

Standard IV: Relationships with and Responsibilities to Clients and Prospects

Standard V: Relationships with and Responsibilities to the Public

4. Why The CFA Designation Matters to You: Individual Investor FAQ

<http://www.cfainstitute.org/aboutus/investors/articles/cfamatters.html>

5. Soft Dollar Standards <http://www.cfainstitute.org/centre/ethics/softdollar/>

6. CFA Institute-PPSTM AIMR Performance Presentation Standards

<http://www.cfapubs.org/doi/ref/10.2469/faj.v57.n2.2433>

7. Global Investment Performance Standards <http://www.cfainstitute.org/centre/ips/>



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Study Session 01: Ethical and Professional Standards:

The readings in this study session present a framework for ethical conduct in the investment profession by focusing on the CFA Institute Code of Ethics and Standards of Professional Conduct as well as the Global Investment Performance Standards (GIPS®).

The principles and guidance presented in the CFA Institute Standards of Practice Handbook (SOPH) form the basis for the CFA Institute self-regulatory program to maintain the highest professional standards among investment practitioners. “Guidance” in the SOPH addresses the practical application of the Code of Ethics and Standards of Professional Conduct. The guidance reviews the purpose and scope of each standard, presents recommended procedures for compliance, and provides examples of the standard in practice.

The Global Investment Performance Standards (GIPS) facilitate efficient comparison of investment performance across investment managers and country borders by prescribing methodology and standards that are consistent with a clear and honest presentation of returns. Having a global standard for reporting investment performance minimizes the potential for ambiguous or misleading presentations.

Reading 1: Code of Ethics and Standards of Professional Conduct

Reading 2: “Guidance” for Standards I–VII

Reading 3: Introduction to the Global Investment Performance Standards (GIPS)

Reading 4: Global Investment Performance Standards (GIPS)



1. Which of the following is classified as a firm under GIPS?
 - A. All the assets that are managed in one or more base currencies fall under the definition of a firm.
 - B. An investment firm, subsidiary, or division held out to clients or potential clients as a distinct business unit.
 - C. An entity registered with the appropriate national regulatory authority overseeing its investment management activities.
 - D. Any division of an investment bank that is providing advisory services to clients on securities listed in the local capital markets.
-
2. Adrian Johns has just been awarded a CFA charter following his successful completion of the CFA program. Which of the following statements made by Johns is an inappropriate reference to the CFA program and designation?
 - A. As a CFA charterholder I am committed to maintaining high ethical standards of conduct.
 - B. As I passed the CFA examinations in three consecutive years I am highly qualified to manage client funds.
 - C. The CFA Program is a highly rigorous and comprehensive study program in the field of investment analysis.
 - D. I believe the CFA program provides the highest qualification in the international investment management industry.



2 Study Session 01:

1. Which of the following is classified as a firm under GIPS?
 - A. All the assets that are managed in one or more base currencies fall under the definition of a firm.
 - B. An investment firm, subsidiary, or division held out to clients or potential clients as a distinct business unit.
 - C. An entity registered with the appropriate national regulatory authority overseeing its investment management activities.
 - D. Any division of an investment bank that is providing advisory services to clients on securities listed in the local capital markets.

Correct Answer: B..... **LOS: Reading 4-b**

Firms must be an investment firm, subsidiary, or division held out to clients or potential clients as a distinct business unit. Firms are encouraged to adopt the broadest interpretation of 'firm', and so include all offices operating under the same brand name.

Reference: CFA® Program Curriculum, Volume 1, p. 132.

2. Adrian Johns has just been awarded a CFA charter following his successful completion of the CFA program. Which of the following statements made by Johns is an inappropriate reference to the CFA program and designation?
 - A. As a CFA charterholder I am committed to maintaining high ethical standards of conduct.
 - B. As I passed the CFA examinations in three consecutive years I am highly qualified to manage client funds.
 - C. The CFA Program is a highly rigorous and comprehensive study program in the field of investment analysis.
 - D. I believe the CFA program provides the highest qualification in the international investment management industry.

Correct Answer: B..... **LOS: Reading 2-b**

Statements which are factual with respect to passing the exams are acceptable, but to claim superiority in doing so is unacceptable. Statements that emphasise the rigour of the CFA program or its commitment to ethical standards are permitted.

Reference: CFA® Program Curriculum, Volume 1, pp. 103-107.



3. Which of the following is least likely to be an example of market manipulation according to the Code and Standards?

- A. Taking advantage of market inefficiencies to make profits on arbitrage strategies.
 - B. Agreeing to issue stock in an IPO to market participants if they agree to generate turnover in the stock subsequent to listing.
 - C. Circulating negative rumors on a stock in order to push down the stock price and allow a fund to cover a short position in the stock.
 - D. Purchasing leading stocks in an index just prior to the expiry date of futures contracts on the index in order to make a profit on a long position in the futures contract.
-

4. Which of the following parties do the Global Investment Performance Standards mainly benefit?

- A. CFA Institute members only.
- B. CFA Institute members and investment management firms only.
- C. Investment management firms, and prospective and current clients of investment management firms only.
- D. CFA Institute members, investment management firms, and prospective and current clients of investment management firms.



4 Study Session 01:

3. Which of the following is least likely to be an example of market manipulation according to the Code and Standards?
- A. Taking advantage of market inefficiencies to make profits on arbitrage strategies.
 - B. Agreeing to issue stock in an IPO to market participants if they agree to generate turnover in the stock subsequent to listing.
 - C. Circulating negative rumors on a stock in order to push down the stock price and allow a fund to cover a short position in the stock.
 - D. Purchasing leading stocks in an index just prior to the expiry date of futures contracts on the index in order to make a profit on a long position in the futures contract.

Correct Answer: A **LOS: Reading 2-a**

Market manipulation is artificially creating stock market prices or volumes. Arbitrage strategies are not a form of manipulation since they are taking advantage of pricing inefficiencies existing in the market, and are a legitimate practice.

Reference: CFA® Program Curriculum, Volume 1, pp. 45-48.

4. Which of the following parties do the Global Investment Performance Standards mainly benefit?
- A. CFA Institute members only.
 - B. CFA Institute members and investment management firms only.
 - C. Investment management firms, and prospective and current clients of investment management firms only.
 - D. CFA Institute members, investment management firms, and prospective and current clients of investment management firms.

Correct Answer: C **LOS: Reading 3-a**

The main parties benefiting from GIPS are prospective and current clients of investment management firms and the firm itself since they ensure past and current performance figures are accurately and fairly presented.

Reference: CFA® Program Curriculum, Volume 1, pp. 120-121.



5. Which of the following statements is the least accurate statement regarding verification of compliance with the Global Investment Performance Standards?

- A. Verification has been a requirement since 1 January 2000.
- B. Verification must be performed by an independent third party.
- C. Verification checks whether the calculation procedures meet GIPS requirements.
- D. Verification checks whether the composite construction meets GIPS requirements.

6. Elizabeth Salami and Albert Toffee have both passed Level II of the CFA Exam Program. Salami advertises a resume stating that she is a candidate for the CFA designation and has passed Level II of the CFA Program. Toffee circulates a resume stating that he is a CFA candidate who has passed Level II and expects to obtain his CFA charter in 2009, the following year. Both have enrolled to take Level III in 2009. Which of the following statements is most accurate?

- A. Only Toffee has violated the Code and Standards.
- B. Only Salami has violated the Code and Standards.
- C. Both Salami and Toffee have violated the Code and Standards.
- D. Neither Salami nor Toffee has violated the Code and Standards.



6 Study Session 01:

5. Which of the following statements is the least accurate statement regarding verification of compliance with the Global Investment Performance Standards?

- A. Verification has been a requirement since 1 January 2000.
- B. Verification must be performed by an independent third party.
- C. Verification checks whether the calculation procedures meet GIPS requirements.
- D. Verification checks whether the composite construction meets GIPS requirements.

Correct Answer: A **LOS: Reading 3-c**

Verification is recommended but not required. Verification must be done by an independent third party who will check if a firm's processes and procedures to calculate performance numbers are in compliance with GIPS, and whether composite construction has complied with GIPS.

Reference: CFA® Program Curriculum, Volume 1, p. 121.

6. Elizabeth Salami and Albert Toffee have both passed Level II of the CFA Exam Program. Salami advertises a resume stating that she is a candidate for the CFA designation and has passed Level II of the CFA Program. Toffee circulates a resume stating that he is a CFA candidate who has passed Level II and expects to obtain his CFA charter in 2009, the following year. Both have enrolled to take Level III in 2009. Which of the following statements is most accurate?

- A. Only Toffee has violated the Code and Standards.
- B. Only Salami has violated the Code and Standards.
- C. Both Salami and Toffee have violated the Code and Standards.
- D. Neither Salami nor Toffee has violated the Code and Standards.

Correct Answer: A **LOS: Reading 2-b**

Standard VII(B) indicates that candidates should not cite the expected date of the exam completion and award of the charter. If Salami had not enrolled for the Level III examination, she would have also violated the Code and Standards by claiming to be a (current) candidate.

Reference: CFA® Program Curriculum, Volume 1, pp. 103-107.



7. According to the Standards of Professional Conduct, when writing material for circulation to the public:

- A. members may copy or use charts or graphs without stating the sources and members may orally, for example in a group meeting, without acknowledgment, use excerpts from articles or reports prepared by others.
 - B. members may copy or use charts or graphs without stating the sources but members may not orally, for example in a group meeting, without acknowledgment, use excerpts from articles or reports prepared by others.
 - C. members may not copy or use charts or graphs without stating the sources but members may orally, for example in a group meeting, without acknowledgment, use excerpts from articles or reports prepared by others.
 - D. members may not copy or use charts or graphs without stating the sources and members may not orally, for example in a group meeting, without acknowledgment, use excerpts from articles or reports prepared by others.
-

8. Joshua Horne has just been awarded a CFA charter. His employer, AEB Investments, decides to change their marketing literature since they now employ three CFA charterholders in the company. Which of the following is an acceptable statement for the firm to include in its brochure?

- A. The credibility of the firms' investments services is underlined by its employment of three CFAs.
- B. The firm is committed to the highest ethical standards, supported by our three CFA charterholders.
- C. We now have three CFAs in the company; all involved with making investment decisions on behalf of our clients.
- D. We have decided to rename the firm AEB Chartered Financial Analysts Corp. to reflect our commitment to our employees studying for the CFA designation.



8 Study Session 01:

7. According to the Standards of Professional Conduct, when writing material for circulation to the public:

- A. members may copy or use charts or graphs without stating the sources and members may orally, for example in a group meeting, without acknowledgment, use excerpts from articles or reports prepared by others.
- B. members may copy or use charts or graphs without stating the sources but members may not orally, for example in a group meeting, without acknowledgment, use excerpts from articles or reports prepared by others.
- C. members may not copy or use charts or graphs without stating the sources but members may orally, for example in a group meeting, without acknowledgment, use excerpts from articles or reports prepared by others.
- D. members may not copy or use charts or graphs without stating the sources and members may not orally, for example in a group meeting, without acknowledgment, use excerpts from articles or reports prepared by others.

Correct Answer: D..... **LOS: Reading 2-b**

Standard I(C) prohibits plagiarism, whether it is a written or oral form of communication of another's work. Other parties' research (charts, graphs, articles, reports etc.) may be quoted but the research must be attributed to the original author.

Reference: CFA® Program Curriculum, Volume 1, pp. 29-34.

8. Joshua Horne has just been awarded a CFA charter. His employer, AEB Investments, decides to change their marketing literature since they now employ three CFA charterholders in the company. Which of the following is an acceptable statement for the firm to include in its brochure?

- A. The credibility of the firms' investments services is underlined by its employment of three CFAs.
- B. The firm is committed to the highest ethical standards, supported by our three CFA charterholders.
- C. We now have three CFAs in the company; all involved with making investment decisions on behalf of our clients.
- D. We have decided to rename the firm AEB Chartered Financial Analysts Corp. to reflect our commitment to our employees studying for the CFA designation.

Correct Answer: B..... **LOS: Reading 2-a**

CFA is an adjective not a noun, a firm's name should not include the CFA designation and the CFA designation should not be used to claim superior investment skills. Statement B is acceptable, CFA charterholders should be committed to the highest ethical standards.

Reference: CFA® Program Curriculum, Volume 1, pp. 105-107.



9. Mary Chew, CFA, is a junior research analyst with XYZ Securities and she has been asked by her Head of Research to prepare a research report on First Beverages Inc. Chew is aware that XYZ Securities has acted as underwriter to First Beverages on a number of occasions in the past. She thoroughly analyses First Beverages and decides that First Beverages' shares are undervalued. Chew's best course of action is to:

- A. write the research report but not make the recommendation that the shares are undervalued.
 - B. write the report including the recommendation as long as she discloses the relationship between XYZ Securities and First Beverages.
 - C. keep the analysis on file but not write any report to be circulated to clients given the relationship between XYZ Securities and First Beverages.
 - D. write the research report and include the recommendation since it is favourable and will enhance the relationship between XYZ Securities and First Beverages.
-

10. Which one of the following is least likely to be a required part of the verification process for a firm claiming compliance with GIPS?

- A. Ensuring that the firm's calculation of performance is in compliance with GIPS.
- B. Checking that fees charged to client accounts are in line with market practice.
- C. Checking that required disclosures have been made in the performance presentation.
- D. Checking that composites have been set up in line with client objectives or the strategy followed.



10 Study Session 01:

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- D. write the research report and include the recommendation since it is favourable and will enhance the relationship between XYZ Securities and First Beverages.

Correct Answer: B.....**LOS: Reading 2-a**

Under Standard VI(A) Disclosure of Conflicts, disclosure of the relationship is required regardless of whether a recommendation is made, although management should not put pressure on Chew to make a favourable recommendation.

Reference: CFA® Program Curriculum, Volume 1, pp. 89-94.

10. Which one of the following is least likely to be a required part of the verification process for a firm claiming compliance with GIPS?

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- B. Checking that fees charged to client accounts are in line with market practice.
- C. Checking that required disclosures have been made in the performance presentation.
- D. Checking that composites have been set up in line with client objectives or the strategy followed.

Correct Answer: B.....**LOS: Reading 4-a**

There is no requirement to check the fairness of fees being charged to clients in terms of whether they are in line with market standards.

Reference: CFA® Program Curriculum, Volume 1, pp. 126-128.



11. Catherine Cleves, CFA, heads the Asian research department in Hong Kong of a New York-based brokerage firm. The firm employs many analysts spread about in different countries in Asia, some of whom are members of CFA Institute. If Cleves delegates some supervisory duties in the different offices in Asia, which of the following statements best describes her responsibilities under the Code and Standards?

- A. Cleves retains supervisory responsibility for all subordinates despite her delegation of some duties.
- B. Cleves' supervisory responsibilities only apply to those subordinates who are subject to the Code and Standards.
- C. The Code and Standards prevent Cleves from delegating supervisory duties to subordinates in a developing or emerging market.
- D. Cleves no longer has supervisory responsibility for those duties delegated to her subordinates who are not CFA Institute members and working from an office in an emerging market.

12. Which one of the following is least likely to be a reason why the Global Investment Presentation Standards (GIPS) were created?

- A. Clients and prospective clients reside in different countries.
- B. Investment management firms have operations in multiple countries.
- C. Many countries have not established comprehensive investment performance standards.
- D. GIPS were established to compete with the European-based mandatory global investment performance standards.



12 Study Session 01:

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- D. Cleves no longer has supervisory responsibility for those duties delegated to her subordinates who are not CFA Institute members and working from an office in an emerging market.

Correct Answer: A **LOS: Reading 2-a**

Standard IV(C) Responsibilities of Supervisors states that supervisory responsibility remains with the supervisor although the actual supervision can be delegated. Members who are supervisors can rely on reasonable procedures to detect and prevent violations to applicable statutes, regulations and provisions of the Code and Standards.

Reference: CFA® Program Curriculum, Volume 1, pp. 76-80.

12. Which one of the following is least likely to be a reason why the Global Investment Presentation Standards (GIPS) were created?

- A. Clients and prospective clients reside in different countries.
- B. Investment management firms have operations in multiple countries.
- C. Many countries have not established comprehensive investment performance standards.
- D. GIPS were established to compete with the European-based mandatory global investment performance standards.

Correct Answer: D **Reading 3-a**

GIPS were created to fill the void of a globally recognized investment performance standard, not to compete with European standards. There are no mandatory global standards.

Reference: CFA® Program Curriculum, Volume 1, pp. 119-120.



13. Toby Green, CFA, works in an equity brokerage department at Mulberry Securities. Green has reviewed a report from the firm's research department that suggests Crown Appliances is rated a "buy" because the sales figures for the firm's new products have been better than those of the closest competition. Green lives on the same street as the CFO of Crown Appliances. While waiting for the train to work, Green accidentally overheard the Chief Financial Officer of Crown Appliances report to his colleague on a mobile phone about an announcement in the morning newspaper that a competitor has just launched a website for appliance distribution over the internet. Upon returning to his office, Green tipped his father to sell his holding based on this new information, but he still recommends a buy to all Mulberry's clients. Green:

- A. was in full compliance with the Code and Standards.
 - B. violated the Code and Standards by failing to maintain fair dealing.
 - C. violated the Code and Standards because he gave a recommendation based on material nonpublic information.
 - D. violated the Code and Standards because he failed to maintain priority of transactions for his firm's clients.
-

14. Which of the following statements is most accurate? A firm can claim compliance with the GIPS standards

- A. as long as its consulting actuary is compliant.
- B. with a "moving window" of 5-year compliant results.
- C. without all of their composites meeting the GIPS requirements.
- D. if it has been in existence less than 5 years, as long as any performance record is GIPS complaint.



14 Study Session 01:

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- B. violated the Code and Standards by failing to maintain fair dealing.
- C. violated the Code and Standards because he gave a recommendation based on material nonpublic information.
- D. violated the Code and Standards because he failed to maintain priority of transactions for his firm's clients.

Correct Answer: A **LOS: Reading 2-b**

Green did not violate Standard II(A) Material Nonpublic Information because the announcement appears in the morning newspaper. His buy recommendation is consistent with that of his firm's research department and no violation of priority of transactions occurs here.

Reference: CFA® Program Curriculum, Volume 1, pp. 36-39.

14. Which of the following statements is most accurate? A firm can claim compliance with the GIPS standards

- A. as long as its consulting actuary is compliant.
- B. with a "moving window" of 5-year compliant results.
- C. without all of their composites meeting the GIPS requirements.
- D. if it has been in existence less than 5 years, as long as any performance record is GIPS compliant.

Correct Answer: D **Reading 4-b**

If the firm has been in existence for less than five years, it can claim compliance since its inception, but disclosure of the fact is required. Otherwise it needs a compliant track record of five years which must be built up to ten years as each year's results are added. All composites must be included.

Reference: CFA® Program Curriculum, Volume 1, p. 128.



15. Bud Clayton, CFA, manages the discretionary account of the Lewin Jones Corporation employees' profit-sharing plan. Diane Lewin, the company president, recently asked Clayton to vote on behalf of the shares in the firm's profit-sharing plan in favor of the company-nominated slate of directors and against the slate of directors sponsored by a corporate-raider stockholder group. Clayton does not want to lose Lewin Jones as a client, because the account generates more than 20 percent of his firm's revenues. Clayton investigates the proxy-fight issue and realizes that the corporate raider's slate of directors would probably be better for the long-run performance of the firm than that recommended by the management. However Clayton fears that the new board, which he hardly knows, will shift the business to a competing investment firm as often happens in corporate takeovers. According to the Code and Standards, Clayton should:

- A. vote in the manner requested by Lewin due to her importance as a major client.
 - B. vote against the corporate raider's recommendation as corporate raiding is unethical.
 - C. abstain from voting since this sort of proxy-fight is counterproductive and threatens the fabric of corporate culture.
 - D. vote in favor of the corporate raider's recommendation since it is in the best interest of the participants and beneficiaries of the employees' profit sharing plan.
-

16. Johnson McCall, CFA, makes stock recommendations to clients after taking into account the findings of a third-party quantitatively based research service used by his firm. The firm he works for has performed due diligence to ensure the research is sound. Which of the following best describes McCall's position?

- A. McCall is free to use the research.
- B. McCall should make his own efforts to ensure that the quantitative research is sound.
- C. McCall should not use third-party research when making recommendations; he can only use his own firm's research.
- D. McCall cannot use quantitatively based research, since it is often using selection criteria that may not be understood in detail by the client.



16 Study Session 01:

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- C. abstain from voting since this sort of proxy-fight is counterproductive and threatens the fabric of corporate culture.
- D. vote in favor of the corporate raider's recommendation since it is in the best interest of the participants and beneficiaries of the employees' profit sharing plan.

Correct Answer: D..... **LOS: Reading 2-b**

This is a test case on the execution of a fiduciary duty by investment managers as stated in Standard III (A) Loyalty, Prudence, and Care. Clayton's main obligation is to maintain the interest of his client namely the Lewin Jones employees' profit-sharing plan.

Reference: CFA® Program Curriculum, Volume 1, pp. 48-53.

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- D. McCall cannot use quantitatively based research, since it is often using selection criteria that may not be understood in detail by the client.

Correct Answer: A..... **Reading 2-a**

McCall can rely on his firms' due diligence unless he has grounds for suspecting the validity or the process of the due diligence. Using quantitative criteria to select stocks is acceptable as long as it is based on a sound process and the general principles of how selections are made are communicated to the clients.

Reference: CFA® Program Curriculum, Volume 1, p. 81.



17. Which one of the following requirements is least likely to help to ensure the establishment of an information barrier (fire wall)?

- A. Monitor carefully the personal trading activities of firm personnel.
- B. Limit the number of people in the firm who have access to material nonpublic information
- C. Place securities on a restricted list when the firm has access to material nonpublic information.
- D. Limit the number of major institutional clients who regularly receive 'special investment tips' prior to information being made public.

18. Rachael Jocund, CFA, is an equity analyst following cigarette companies and a rising star in her firm. Her supervisor has been recommending D. Morass as a 'buy' and asks Jocund to take over the coverage of the company. He tells Jocund that she can only change the recommendation with his approval. The Code and Standards say that:

- A. Jocund must be independent and objective in her analysis.
- B. Jocund should follow her supervisor's direction but notify the legal officer of her firm of the situation.
- C. Jocund should follow her supervisor's direction as she reports to him, although she should keep records of any information that would lead her to feel uncomfortable with the buy recommendation.
- D. Jocund should report the situation to CFA Institute and try to seek legal protection.



18 Study Session 01:

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Correct Answer: D.....**LOS: Reading 2-a**

Firewalls are intended to block the dissemination of material nonpublic information. Choice (D) is a conscious effort of dissemination, albeit to a limited number of clients, therefore is in violation of Standard II(A) Material Nonpublic Information.

Reference: CFA® Program Curriculum, Volume 1, pp. 36-45.

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Correct Answer: A**Reading 2-a**

As part of responsibilities to clients and prospects, members must personally maintain independence and objectivity so their clients will have the benefit of their work and opinions unaffected by any potential conflict of interest or other circumstance adversely affecting their judgment

Reference: CFA® Program Curriculum, Volume 1, pp. 21-25.



19. Cliff Bardots, CFA, is a research analyst who has accumulated and analyzed several pieces of nonpublic information through his industry contacts. Although each piece of information is not material, Bardots correctly deduced that the earnings of one of the firms under his coverage would unexpectedly decline significantly in the coming year. According to the Code and Standards, Bardots:

- A. should report the sources of the material nonpublic information to the CFA Institute.
 - B. is allowed to use the information to make investment recommendations and decisions.
 - C. is not allowed to make investment recommendations or actions based on this information.
 - D. should urge his industry contacts to publicly disseminate the information immediately.
-

20. Albert Wonghi, CFA, is a fund manager with Prospect Asset Management. At a lunch time party, hosted by a brokerage firm to whom he directs 50 percent of his transactions, Wonghi has too much to drink and behaves embarrassingly before returning to his office. Other fund managers attend the party. Wonghi's personal behavior at the party is most likely to violate Standard I(D) of the Code and Standards because:

- A. Wonghi breaks the local laws regarding behavior in public.
- B. Wonghi should not drink any alcohol during business hours.
- C. Wonghi's behavior reflects poorly on him and the investment industry.
- D. Wonghi offends the brokerage firm who is forced to tolerate his behavior.



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- C. is not allowed to make investment recommendations or actions based on this information.
- D. should urge his industry contacts to publicly disseminate the information immediately.

Correct Answer: B..... **LOS: Reading 2-b**

This is an example of an application of mosaic theory. It is legitimate to employ an educated deduction over pieces of 'nonmaterial' nonpublic information and to arrive at an investment recommendation, Standard V(A) Diligence and Reasonable Basis.

Reference: CFA® Program Curriculum, Volume 1, pp. 38-39.

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Correct Answer: C **LOS: Reading 2-a**

With reference to Standard I(D) Professionalism, Wonghi's excessive drinking will inhibit his ability to work in the afternoon and reflects badly on the profession. The best answer is C.

Reference: CFA® Program Curriculum, Volume 1, pp. 35-36.



21. Martha Birch, CFA, is a financial analyst at Granders Securities Corporation. Granders has information firewalls between different departments in compliance with recommendations made in the Code and Standards. Birch is preparing a purchase recommendation on B&D Corporation. Which of the following situations would be least likely to present a conflict of interest for Birch and, therefore, needs not be disclosed?

- A. Birch's brother is a member of the board of directors of B&D.
 - B. Birch has been a member of the board of directors of B&D until three months ago.
 - C. Granders, through its investment advisory arm, holds for its clients' accounts a substantial holding of common stock in B&D Corporation.
 - D. Birch was formerly married to the Chief Financial Officer of B&D and has recently received a significant stock holding as part of her divorce settlement.
-

22. Which of the following is a statement of a member's duty under the Code and Standards?

- A. In the absence of a specific applicable law and other rules and regulations, the Code and Standards govern the member's actions.
- B. When the applicable local law, rules and regulations do not adequately cover the use of material nonpublic information; a member is free to take advantage of the loophole.
- C. When there is a conflict between the Code and Standards and local law, rules and regulations a member can use their discretion when deciding which rules or Standards to comply with.
- D. A member is only required to comply only with the Code and Standards even when the applicable local law, rules and regulations impose a higher degree of responsibility and duty on the member.



22 Study Session 01:

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Correct Answer: C **LOS: Reading 2-a**

Choice C does not present a potential conflict of interest as stated in Standard VI(A), Disclosure of Conflicts, as the appropriate firewall between an investment advisory arm and the brokerage operation would be established pursuant to the Code and Standards.

Reference: CFA® Program Curriculum, Volume 1, pp. 89-94.

22. Which of the following is a statement of a member's duty under the Code and Standards?

- A. In the absence of a specific applicable law and other rules and regulations, the Code and Standards govern the member's actions.
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Correct Answer: A **Reading 2-a**

The rule of thumb: If an applicable law is stricter than the requirements of the Code and Standards, members must adhere to the law; otherwise they must adhere to the Code and Standards. This relates to Standard I(A) Knowledge of the Law.

Reference: CFA® Program Curriculum, Volume 1, pp. 15-17.



23. Compliance with GIPS can be claimed:

- A. only on a firm-wide basis.
- B. on a composite by composite basis.
- C. on an asset class by asset class basis.
- D. on an investment manager by investment manager basis.

24. Material nonpublic information, as a matter of course in business, circulates within an investment banking department. If the investment bank has an equity brokerage division, it may create considerable value by using the information in advising the brokerage clients. In order to help conform to the Code and Standards, which of the following is the best policy for the brokerage firm to follow?

- A. Ensure that all transactions executed by the brokerage division that result from access to material nonpublic information are fully documented.
- B. Minimize the impact by allowing the information to benefit only a limited list of the largest brokerage clients, carefully selected by the head of brokerage operation.
- C. Prohibit buy and sell recommendations on the stocks of the investment banking clients until the transactions with the clients are officially completed and the material information becomes public.
- D. Prohibit purchase recommendations because of the unfair advantage that the information may create, but allow the sale of current holdings until transactions with the investment banking clients are officially completed and the material information becomes public.



24 Study Session 01:

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- A. only on a firm-wide basis.
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- C. on an asset class by asset class basis.
- D. on an investment manager by investment manager basis.

Correct Answer: A **LOS: Reading 4-b**

Compliance can only be claimed if all the firm's fee paying and discretionary accounts are include in composites, and all composites are GIPS compliant. Partial compliance is not permitted.

Reference: CFA® Program Curriculum, Volume 1, p. 132.

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- D. Prohibit purchase recommendations because of the unfair advantage that the information may create, but allow the sale of current holdings until transactions with the investment banking clients are officially completed and the material information becomes public.

Correct Answer: C **LOS: Reading 2-c**

The procedures in applying Standard II(A) are aimed to eliminate the possibility of dissemination of material nonpublic information. The most common ways are to establish a firewall and to create a restricted list of securities if a firm has access to material nonpublic information.

Reference: CFA® Program Curriculum, Volume 1, pp. 36-45.



25. The Code of Ethics requires members and candidates to act with integrity, competence, diligence, respect and in an ethical manner when dealing with:

- A. the public only.
 - B. clients and prospective clients only
 - C. the public, clients and prospective clients only.
 - D. the public, clients and prospective clients, and employers, employees, and colleagues in the investment profession.
-

26. Which of the following is not one of the eight main sections of GIPS?

- A. Input data.
- B. Verification.
- C. Composite construction.
- D. Calculation methodology.



26 Study Session 01:

25. The Code of Ethics requires members and candidates to act with integrity, competence, diligence, respect and in an ethical manner when dealing with:

- A. the public only.
- B. clients and prospective clients only
- C. the public, clients and prospective clients only.
- D. the public, clients and prospective clients, and employers, employees, and colleagues in the investment profession.

Correct Answer: D..... **Reading 1-b**

The first component of the Code of Ethics is:

‘Act with integrity, competence, diligence, respect and in an ethical manner with the public, clients, prospects, employers, employees, colleagues in the investment profession and other participants in the global capital markets’.

Reference: CFA® Program Curriculum, Volume 1, p. 11.

26. Which of the following is not one of the eight main sections of GIPS?

- A. Input data.
- B. Verification.
- C. Composite construction.
- D. Calculation methodology.

Correct Answer: B..... **Reading 4-d**

Verification is not one of the eight main sections, although strongly recommended. The eight sections are fundamentals of compliance, input data, calculation methodology, composite construction, disclosures, presentation and reporting, real estate and private equity.

Reference: CFA® Program Curriculum, Volume 1, pp. 131-132.



27. Patricia Lualua, CFA, is a portfolio manager of Raven Asset Management. Recently she won a mandate from the Flemish Widows pension fund trustees to manage the investments of the fund. One of the Flemish Widows trustees privately mentions that Lualua should direct her trades to Churner Securities, which is owned by a relative of one of the trustees. Lualua, for fear of losing the account, directs 50% of the trades to Churner Securities. She is pleased to find that Churner's quality of execution is good and the emerging market research quality is excellent. Although Flemish Widows does not invest in emerging markets, Lualua finds the research useful for the other funds she manages. Lualua decides not to inform anyone regarding the situation. According to the Code and Standards:

- A. Lualua should stop trading with Churner Securities.
- B. Lualua may continue trading with Churners Securities.
- C. Lualua should disclose this arrangement to Flemish Widows.
- D. Lualua should disclose this arrangement to the CFA Institute.

28. Carlina Paparazzi, a fund manager with Abbotswood Advisors, has just been given the authority to manage a newly acquired client which has a retirement benefit plan, when she realizes that a US Government Bond belonging to the account matures the next day. The bond comprises 5% of the total assets. Abbotswood Advisors is still in the midst of a discussion with the client regarding the formulation of a new investment policy and portfolio objectives. Looking at what the current market has to offer, there are a number of attractive opportunities. One opportunity that stands out is a corporate bond of a major oil company that went out of favor due to an environmental accident that occurred the week before. She has followed the oil company for a number of years and knows that its fundamentals are sound. The prospect of an improved credit rating in the next six months is not yet reflected in the current price. Her supervisor asks Paparazzi to invest the proceeds in the corporate bond. Paparazzi prefers however to invest them in 3-month Treasury Bills, albeit with a much lower yield, until the new investment policy and objectives are formulated. What is the best course of action for Paparazzi?

- A. Invest in the Treasury Bills until the new investment policy and objectives are established.
- B. Split the investment between the corporate bond and the Treasury Bills to diversify the risk.
- C. Revert to the client for a decision and do nothing until the client's direction is received.
- D. Follow her supervisor's direction as the corporate bond opportunity will benefit the overall performance of the fund.



28 Study Session 01:

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- A. Lualua should stop trading with Churner Securities.
- B. Lualua may continue trading with Churners Securities.
- C. Lualua should disclose this arrangement to Flemish Widows.
- D. Lualua should disclose this arrangement to the CFA Institute.

Correct Answer:A. C **LOS: Reading 2-b**

Under most securities laws this situation is acceptable but under Standard III(A), Loyalty, Prudence and Care, Lualua's trading relationship does not put her client's interest first.

Lualua should disclose the arrangement to the Board of Trustees of Flemish Widows and let the Board give the direction.

Reference: CFA® Program Curriculum, Volume 1, pp. 48-53.



28. Carlina Paparazzi, a fund manager with Abbotswood Advisors, has just been given the authority to manage a newly acquired client which has a retirement benefit plan, when she realizes that a US Government Bond belonging to the account matures the next day. The bond comprises 5% of the total assets. Abbotswood Advisors is still in the midst of a discussion with the client regarding the formulation of a new investment policy and portfolio objectives. Looking at what the current market has to offer, there are a number of attractive opportunities. One opportunity that stands out is a corporate bond of a major oil company that went out of favor due to an environmental accident that occurred the week before. She has followed the oil company for a number of years and knows that its fundamentals are sound. The prospect of an improved credit rating in the next six months is not yet reflected in the current price. Her supervisor asks Paparazzi to invest the proceeds in the corporate bond. Paparazzi prefers however to invest them in 3-month Treasury Bills, albeit with a much lower yield, until the new investment policy and objectives are formulated. What is the best course of action for Paparazzi?

- A. Invest in the Treasury Bills until the new investment policy and objectives are established.
- B. Split the investment between the corporate bond and the Treasury Bills to diversify the risk.
- C. Revert to the client for a decision and do nothing until the client's direction is received.
- D. Follow her supervisor's direction as the corporate bond opportunity will benefit the overall performance of the fund.

Correct Answer:A. A.....**LOS: Reading 2-b**

Regardless of whether it is the best investment decision, choices C or D will violate Standard III(C), Suitability, because the overall investment policy and objectives are not yet established. Choice A is not correct because the client pays a fee to hire expertise in investment decision making. So the best choice is B, where the client's interest is protected, as a Treasury Bill is a cash equivalent and is risk-free, as are the maturing Treasury Bonds.

Reference: CFA® Program Curriculum, Volume 1, pp. 60-64.



Study session 02: Quantitative Methods:

Basic Concepts

This introductory study session presents the fundamentals of those quantitative techniques that are essential in almost any type of financial analysis, and which will be used throughout the remainder of the CFA curriculum. This session introduces two main building blocks of the quantitative analytical tool kit: (1) the time value of money and (2) statistics and probability theory.

The time value of money concept is one of the main principles of financial valuation. The calculations based on this principle (e.g., present value, future value, and internal rate of return) are the basic tools used to support corporate finance decisions and estimate the fair value of fixed income, equity, or any other type of security or investment.

Similarly, the basic concepts of statistics and probability theory constitute the essential tools used in describing the main statistical properties of a population and understanding and applying various probability concepts in practice.

Reading 5: The Time Value of Money

Reading 6: Discounted Cash Flow Applications

Reading 7: Statistical Concepts and Market Returns

Reading 8: Probability Concepts



1. The number of cars sold per month over the last three years by ABC Car Distributor is as follows:

	J	F	M	A	M	J	J	A	S	O	N	D
2005	30	35	45	46	52	48	40	35	35	28	20	16
2006	19	25	34	41	43	37	34	27	26	20	15	14
2007	32	34	30	44	51	55	60	45	44	38	34	26

You have been asked to build a frequency distribution using 6 classes and you select the first class to be '10 up to 20':

What is the class frequency and relative class frequency of the second class?

	Class frequency	Relative class frequency
A.	7	0.194
B.	7	0.278
C.	10	0.194
D.	10	0.278

2. A team of four people is to be selected from a group of nine students. How many ways can they be selected?

- A. 24.
- B. 126.
- C. 2,880.
- D. 3,024.



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1. The number of cars sold per month over the last three years by ABC Car Distributor is as follows:

	J	F	M	A	M	J	J	A	S	O	N	D
2005	30	35	45	46	52	48	40	35	35	28	20	16
2006	19	25	34	41	43	37	34	27	26	20	15	14
2007	32	34	30	44	51	55	60	45	44	38	34	26

You have been asked to build a frequency distribution using 6 classes and you select the first class to be '10 up to 20':

What is the class frequency and relative class frequency of the second class?

	Class frequency	Relative class frequency
A.	7	0.194
B.	7	0.278
C.	10	0.194
D.	10	0.278

Correct Answer: A **LOS: Reading 7-b**

The second class is for sales from 20 up to 30 cars per month, there are 7 observations in this range which is the class frequency. The relative frequency is the percentage of observations in each class, for the second class this is $7 \div 36 = 19.4\%$

Reference: CFA® Program Curriculum, Volume 1, pp. 243-251.

2. A team of four people is to be selected from a group of nine students. How many ways can they be selected?

- A. 24.
- B. 126.
- C. 2,880.
- D. 3,024.

Correct Answer: B **LOS: Reading 8-n**

Since the order of the four students to be selected does not matter we can use the combination (binomial)

formula. The number of ways is:

$$\frac{n!}{(n-r)!r!} = \frac{9!}{4!5!} = \frac{9 \times 8 \times 7 \times 6}{4 \times 3 \times 2 \times 1} = 126$$

Reference: CFA® Program Curriculum, Volume 1, pp. 353-356.



3. Two investment managers have their performance analyzed. The first, A, achieves an average (arithmetic mean) performance of 20% with a standard deviation of 2%. The second, B, achieves an average performance of 12%, with a standard deviation of 1.5%. Which of the following statements is the most accurate?

- A. The coefficient of variation of A's returns is equal to that of B's.
 - B. The coefficient of variation of A's returns is lower than that of B's.
 - C. The coefficient of variation of A's returns is higher than that of B's.
 - D. The coefficients of variation of the returns cannot be calculated using the above information.
-

4. A series of data is normally distributed, has a mean of 50 and standard deviation of 4. Approximately 95% of the readings will fall between:

- A. 46 to 54.
- B. 42 to 58.
- C. 38 to 62.
- D. 34 to 66.



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3. Two investment managers have their performance analyzed. The first, A, achieves an average (arithmetic mean) performance of 20% with a standard deviation of 2%. The second, B, achieves an average performance of 12%, with a standard deviation of 1.5%. Which of the following statements is the most accurate?

- A. The coefficient of variation of A's returns is equal to that of B's.
- B. The coefficient of variation of A's returns is lower than that of B's.
- C. The coefficient of variation of A's returns is higher than that of B's.
- D. The coefficients of variation of the returns cannot be calculated using the above information.

Correct Answer: B..... **LOS: Reading 7-h**

The coefficient of variation is $\frac{\sigma}{\mu} \times 100$ (in percentage terms)

For A this is $\frac{2\% \times 100}{20\%} = 10.0\%$ and for B = $\frac{1.5\% \times 100}{12\%} = 12.5\%$

Reference: CFA® Program Curriculum, Volume 1, pp. 291-293.

4. A series of data is normally distributed, has a mean of 50 and standard deviation of 4. Approximately 95% of the readings will fall between:

- A. 46 to 54.
- B. 42 to 58.
- C. 38 to 62.
- D. 34 to 66.

Correct Answer: B..... **LOS: Reading 7-i**

For a normal distribution 95% of the observations will fall between the mean plus or minus 2 standard deviations, i.e. between 50 ± 8 .

Reference: CFA® Program Curriculum, Volume 1, pp. 297-298.



5. A portfolio of investments is initially worth \$100 million. At the end of the first period the value rises to \$120 million and then falls to \$90 million at the end of the second period. If there are no cash flows the geometric mean rate of return is closest to:

- A. -2.5%.
 - B. -3.3%.
 - C. -5.1%.
 - D. -10.0%.
-

6. If the mean of a distribution is 6 and the standard deviation is 3 then Chebyshev's inequality states that the percentage of the observations that lie between 0 and 12 is at least:

- A. 25%.
- B. 40%.
- C. 75%.
- D. 94%.



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5. A portfolio of investments is initially worth \$100 million. At the end of the first period the value rises to \$120 million and then falls to \$90 million at the end of the second period. If there are no cash flows the geometric mean rate of return is closest to:

- A. -2.5%.
- B. -3.3%.
- C. -5.1%.
- D. -10.0%.

Correct Answer: C **LOS: Reading 7-d**

The geometric mean (GM) is given by:

$$1 + R_G = \sqrt[n]{(1 + R_1)(1 + R_2) \dots (1 + R_n)}$$

$$R_G = (1.2 \times 0.75)^{1/2} - 1 = -5.1\%$$

Reference: CFA® Program Curriculum, Volume 1, pp. 268-272.

6. If the mean of a distribution is 6 and the standard deviation is 3 then Chebyshev's inequality states that the percentage of the observations that lie between 0 and 12 is at least:

- A. 25%.
- B. 40%.
- C. 75%.
- D. 94%.

Correct Answer: C **LOS: Reading 7-g**

0 and 12 are 2 standard deviations away from the mean so using Chebyshev's inequality with $k = 2$, $1 - 1/k^2$ or at least 75% of observations will lie within this range.

Reference: CFA® Program Curriculum, Volume 1, pp. 289-291.



7. The forecast rate of return from an investment has the following probability distribution:

Rate of Return	Probability
15%	0.250
20%	0.500
24%	0.125
26%	0.125

The standard deviation of the rate of return is closest to:

- A. 0.0013.
 - B. 0.0250.
 - C. 0.0357.
 - D. 0.1580.
-
8. Which of the following statements regarding a data distribution is most accurate?
- A. A parameter is a characteristic of a sample.
 - B. A statistic is a characteristic of a population.
 - C. A sample is all members of a specified group.
 - D. A mean of a population is an example of a parameter.



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7. The forecast rate of return from an investment has the following probability distribution:

Rate of Return	Probability
15%	0.250
20%	0.500
24%	0.125
26%	0.125

The standard deviation of the rate of return is closest to:

- A. 0.0013.
- B. 0.0250.
- C. 0.0357.
- D. 0.1580.

Correct Answer: C **LOS: Reading 8-k**

The mean is:

$$E(X) = \sum_{i=1}^n P(X_i) \times X_i = (0.25 \times 15\%) + (0.5 \times 20\%) + (0.125 \times 24\%) + (0.125 \times 26\%) = 20\%$$

The standard deviation is:

$$\sigma^2(X) = \sum_{i=1}^n P(X_i) [X_i - E(X)]^2$$

$$\{[0.25 \times (0.05)^2] + [0.125 \times (0.04)^2] + [0.125 \times (0.06)^2]\}^{1/2} = 0.0357$$

Reference: CFA® Program Curriculum, Volume 1, pp. 330-335.

8. Which of the following statements regarding a data distribution is most accurate?

- A. A parameter is a characteristic of a sample.
- B. A statistic is a characteristic of a population.
- C. A sample is all members of a specified group.
- D. A mean of a population is an example of a parameter.

Correct Answer: D **LOS: Reading 7-b**

A parameter is a characteristic of a population and a statistic is a characteristic of a sample. A population, not a sample, is all members of a group.

Reference: CFA® Program Curriculum, Volume 1, pp. 241-242.



9. Equal numbers of red, white, green and blue folders are manufactured but one in ten of the folders is faulty. The probability that a folder is faulty is equal for each of the colors. What is the probability that if you select one folder that it will be green or faulty?

- A. 31.5%.
- B. 32.5%.
- C. 35.5%.
- D. 37.5%.

10. If an investment costs \$15 and will make a single payment of \$25 in four years' time the annual interest rate that will be earned on the investment is closest to:

- A. 8.8%.
- B. 13.6%.
- C. 16.7%.
- D. 27.2%.



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9. Equal numbers of red, white, green and blue folders are manufactured but one in ten of the folders is faulty. The probability that a folder is faulty is equal for each of the colors. What is the probability that if you select one folder that it will be green or faulty?

- A. 31.5%.
- B. 32.5%.
- C. 35.5%.
- D. 37.5%.

Correct Answer: B.....LOS: Reading 8-e

The Rule of Addition for events, A and B, that are not mutually exclusive, is:

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

So the probability that a folder will be green or faulty is:

$$P(\text{green}) + P(\text{faulty}) - P(\text{green and faulty}) = 0.25 + 0.10 - 0.025 = 0.325 \text{ or } 32.5\%$$

Reference: CFA® Program Curriculum, Volume 1, pp. 325-326.

10. If an investment costs \$15 and will make a single payment of \$25 in four years' time the annual interest rate that will be earned on the investment is closest to:

- A. 8.8%.
- B. 13.6%.
- C. 16.7%.
- D. 27.2%.

Correct Answer: B.....LOS: Reading 5-d

$$FV_N = PV(1 + r)^N$$

$$\$25 = \$15(1 + r)^4$$

$$r = 13.62\%$$

Or use a financial calculator.

Reference: CFA® Program Curriculum, Volume 1, pp. 174-179.



11. An investor wants to buy an annuity that will pay out \$10,000 a year at the end of each of the next 15 years. He can earn an interest rate of 8% on the annuity. The purchase price of the annuity is closest to:

- A. \$85,595.
 - B. \$102,037.
 - C. \$138,889.
 - D. \$150,000.
-

12. It is estimated that a stock has the following probabilities of return:

Return	Probability
15%	0.2
20%	0.4
30%	0.4

The stock's expected return is closest to:

- A. 20.0%.
- B. 21.7%.
- C. 23.0%.
- D. 25.0%.



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11. An investor wants to buy an annuity that will pay out \$10,000 a year at the end of each of the next 15 years. He can earn an interest rate of 8% on the annuity. The purchase price of the annuity is closest to:

- A. \$85,595.
- B. \$102,037.
- C. \$138,889.
- D. \$150,000.

Correct Answer: A **LOS: Reading 5-d**

This is a question asking for the present value of an annuity, use the annuity formula or a financial calculator:

$$PV = A \left[\frac{1 - \frac{1}{(1+r)^N}}{r} \right] = \$10,000 \left[\frac{1 - \frac{1}{(1.08)^{15}}}{0.08} \right] = \$85,595 \quad \text{Or use a financial calculator.}$$

Reference: CFA® Program Curriculum, Volume 1, pp. 190-194.

12. It is estimated that a stock has the following probabilities of return:

Return	Probability
15%	0.2
20%	0.4
30%	0.4

The stock's expected return is closest to:

- A. 20.0%.
- B. 21.7%.
- C. 23.0%.
- D. 25.0%.

Correct Answer: C **LOS: Reading 8-k**

Use the formula for expected value,

$$E(X) = \sum_1^n P(X_i)X_i = (0.2 \times 15\%) + (0.4 \times 20\%) + (0.4 \times 30\%) = 23\%$$

Reference: CFA® Program Curriculum, Volume 1, pp. 332-335.



13. If a distribution has positive excess kurtosis it means:

- A. the distribution is not symmetric.
- B. the distribution is positively skewed.
- C. the mean of the distribution is greater than zero.
- D. the distribution has fatter tails than a normal distribution.

14. Which of the following statements about variance is least accurate? Variance is:

- A. always a positive number.
- B. the square of the standard deviation.
- C. in the same units as the original data.
- D. the arithmetic mean of the squared deviations from the mean.



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13. If a distribution has positive excess kurtosis it means:

- A. the distribution is not symmetric.
- B. the distribution is positively skewed.
- C. the mean of the distribution is greater than zero.
- D. the distribution has fatter tails than a normal distribution.

Correct Answer: D..... **LOS: Reading 7-j**

Positive excess kurtosis means the distribution will be more peaked and have fatter tails than a normal distribution.

Reference: CFA® Program Curriculum, Volume 1, pp. 302-305.

14. Which of the following statements about variance is least accurate? Variance is:

- A. always a positive number.
- B. the square of the standard deviation.
- C. in the same units as the original data.
- D. the arithmetic mean of the squared deviations from the mean.

Correct Answer: C..... **LOS: Reading 7-f**

The standard deviation, not the variance, is in the same units as the original data, since the deviations are squared, summed and then square rooted.

Reference: CFA® Program Curriculum, Volume 1, pp. 282-287.



15. The Sharpe ratio calculates:

- A. the excess risk taken in a portfolio.
- B. the excess return earned per unit of risk taken.
- C. the standard deviation relative to the return earned.
- D. the dispersion relative to the mean of a distribution.

16. A portfolio's performance over 5 years is +14%, -2%, +10%, +14%, +8%. The portfolio's arithmetic mean return and median were:

	Arithmetic mean	Median
A.	8.8%	10.0%
B.	8.6%	10.0%
C.	8.8%	14.0%
D.	8.6%	14.0%



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15. The Sharpe ratio calculates:

- A. the excess risk taken in a portfolio.
- B. the excess return earned per unit of risk taken.
- C. the standard deviation relative to the return earned.
- D. the dispersion relative to the mean of a distribution.

Correct Answer: B..... **LOS: Reading 7-h**

The Sharpe ratio measures the excess return over the risk-free rate in units of risk (standard deviation) taken. It is a common measure used to evaluate the performance of fund managers.

Reference: CFA® Program Curriculum, Volume 1, pp. 293-296.

16. A portfolio's performance over 5 years is +14%, -2%, +10%, +14%, +8%. The portfolio's arithmetic mean return and median were:

	Arithmetic mean	Median
A.	8.8%	10.0%
B.	8.6%	10.0%
C.	8.8%	14.0%
D.	8.6%	14.0%

Correct Answer: A..... **LOS: Reading 7-d**

The arithmetic mean is $\frac{14\% - 2\% + 10\% + 14\% + 8\%}{5} = 8.8\%$

The median is the middle value of the ordered display -2%, +8%, +10%, +14%, +14%

Reference: CFA® Program Curriculum, Volume 1, pp. 255-263.



17. Which of the following statements is most accurate about a frequency distribution histogram?

- A. The individual observations cannot be identified.
 - B. Neighboring points on the graph are connected by a straight line.
 - C. Intervals with zero frequencies are not included on the horizontal axis.
 - D. The frequency of a class is shown by the width of the corresponding bar.
-

18. In a positively skewed distribution which of the following is most likely to occur?

- A. $\text{Mean} \leq \text{median} \leq \text{mode}$.
- B. $\text{Mode} \leq \text{median} \leq \text{mean}$.
- C. $\text{Median} \leq \text{mode} \leq \text{mean}$.
- D. $\text{Median} \leq \text{mean} \leq \text{mode}$.



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17. Which of the following statements is most accurate about a frequency distribution histogram?

- A. The individual observations cannot be identified.
- B. Neighboring points on the graph are connected by a straight line.
- C. Intervals with zero frequencies are not included on the horizontal axis.
- D. The frequency of a class is shown by the width of the corresponding bar.

Correct Answer: A **LOS: Reading 7-c**

B refers to a frequency polygon. C is not correct; they will be included on the horizontal axis but will have zero height. D is not correct; the frequency of a class is shown by the height.

Reference: CFA® Program Curriculum, Volume 1, pp. 251-255.

18. In a positively skewed distribution which of the following is most likely to occur?

- A. $\text{Mean} \leq \text{median} \leq \text{mode}$.
- B. $\text{Mode} \leq \text{median} \leq \text{mean}$.
- C. $\text{Median} \leq \text{mode} \leq \text{mean}$.
- D. $\text{Median} \leq \text{mean} \leq \text{mode}$.

Correct Answer: B **LOS: Reading 7-i**

A positively skewed distribution will have one or more observations that are very large. This will lead to the average (mean) being 'pulled' to the right. The median (the middle reading) will be higher than the mode (the most frequently occurring observation).

Reference: CFA® Program Curriculum, Volume 1, pp. 297-302.



19. The money market yield of a 90-day Treasury bill offering a bank discount yield of 4% is closest to:

- A. 3.00%.
- B. 4.00%.
- C. 4.04%.
- D. 16.99%.

20. The value of \$1,000 invested today, at an interest rate of 12% per year compounded quarterly, in 2 years' time is closest to:

- A. \$1,240.00.
- B. \$1,254.40.
- C. \$1,259.48.
- D. \$1,266.77.



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19. The money market yield of a 90-day Treasury bill offering a bank discount yield of 4% is closest to:

- A. 3.00%.
- B. 4.00%.
- C. 4.04%.
- D. 16.99%.

Correct Answer: C LOS: Reading 6-d

$$r_{MM} = \frac{360 \times r_{BD}}{360 - t \times r_{BD}} = \frac{360 \times 0.04}{360 - (90 \times 0.04)} = 4.04\%$$

Reference: CFA® Program Curriculum, Volume 1, pp. 229-233.

20. The value of \$1,000 invested today, at an interest rate of 12% per year compounded quarterly, in 2 years' time is closest to:

- A. \$1,240.00.
- B. \$1,254.40.
- C. \$1,259.48.
- D. \$1,266.77.

Correct Answer: D LOS: Reading 5-c

$$FV_N = PV \left(1 + \frac{r_s}{m} \right)^{m \times N} = \$1,000 \left(1 + \frac{0.12}{4} \right)^{4 \times 2} = \$1,266.77$$

Or use a financial calculator.

Reference: CFA® Program Curriculum, Volume 1, pp. 179-180.



21. The mean absolute deviation of the data 1, 5, 7, 8, 14 is:

- A. 0.0.
- B. 3.2.
- C. 4.2.
- D. 18.0.

22. A perpetuity has a price of \$1,500 and interest rates are 5% then the payments made per year are closest to:

- A. \$30.00.
- B. \$33.33.
- C. \$50.00.
- D. \$75.00.



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21. The mean absolute deviation of the data 1, 5, 7, 8, 14 is:

- A. 0.0.
- B. 3.2.
- C. 4.2.
- D. 18.0.

Correct Answer: B..... LOS: Reading 7-f

The mean is: $(1 + 5 + 7 + 8 + 14) / 5 = 7$

The absolute mean deviation is:

$$\frac{\sum_{i=1}^n |X_i - \bar{X}|}{n} = \frac{|1-7| + |5-7| + |7-7| + |7-8| + |7-14|}{5} = 3.2$$

Reference: CFA® Program Curriculum, Volume 1, pp. 279-281.

22. A perpetuity has a price of \$1,500 and interest rates are 5% then the payments made per year are closest to:

- A. \$30.00.
- B. \$33.33.
- C. \$50.00.
- D. \$75.00.

Correct Answer: D..... LOS: Reading 5-d

$$PV = \frac{A}{r}$$

$$A = \$1,500 \times 0.05 = \$75$$

Reference: CFA® Program Curriculum, Volume 1, pp. 194-197.



23. The probability of passing an eye test for people over 70 years old is 80% and failing is 20%, for people under 70 years old the rates are 95% and 5% respectively. 15% of the people tested are over 70 years old.

A report is found of someone failing the test, what is the probability that they are over 70 years old?

- A. 3.00%.
- B. 20.00%.
- C. 41.40%.
- D. 95.75%.

24. Which of the following statements is most accurate with respect to the holding period return of an investment?

- A. The return cannot be negative.
- B. The return is an annual percentage yield.
- C. The return includes cash paid to the investor over the period.
- D. A return of 0 indicates that the investment has become worthless.



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23. The probability of passing an eye test for people over 70 years old is 80% and failing is 20%, for people under 70 years old the rates are 95% and 5% respectively. 15% of the people tested are over 70 years old.

A report is found of someone failing the test, what is the probability that they are over 70 years old?

- A. 3.00%.
- B. 20.00%.
- C. 41.40%.
- D. 95.75%.

Correct Answer: C **LOS: Reading 8-m**

Bayes formula:
$$P(A_1 | B) = \frac{P(A_1)P(B | A_1)}{P(A_1)P(B | A_1) + P(A_2)P(B | A_2)}$$

Define A₁ is that they are over 70, and B is that the person fails the test.

$$P(A_1 | B) = \frac{0.15 \times 0.20}{0.15 \times 0.20 + 0.85 \times 0.05} = 0.414$$

Note that this is the joint probability that they are over 70 and fail, divided by the total probability of failure.

Reference: CFA® Program Curriculum, Volume 1, pp. 349-353.

24. Which of the following statements is most accurate with respect to the holding period return of an investment?

- A. The return cannot be negative.
- B. The return is an annual percentage yield.
- C. The return includes cash paid to the investor over the period.
- D. A return of 0 indicates that the investment has become worthless.

Correct Answer: C **LOS: Reading 6-b**

The holding period return is given by the equation below; it is the capital gain (or loss) plus income as a percentage of initial value.

$$R = (EV - BV + Div)/BV$$

Reference: CFA® Program Curriculum, Volume 1, pp. 220-222.



25. An investment is attractive if:

- A. the cost of capital is less than the hurdle rate.
- B. the net internal rate of return (IRR) is positive.
- C. the IRR provides a positive net present value (NPV).
- D. the internal rate of return (IRR) is higher than the cost of capital.

26. The following data is provided on the returns from a universe of mutual funds over the previous year.

	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile
Return	8.0%	9.5%	9.8%	15.5%

Which of the following statements is supported by the data?

- A. The average fund return in the first quartile was 8%.
- B. The average fund return was between 9.5% and 9.8%.
- C. Three quarters of funds achieved returns less than or equal to 15.5%.
- D. One quarter of funds achieved returns that were less than or equal to 8%.



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25. An investment is attractive if:

- A. the cost of capital is less than the hurdle rate.
- B. the net internal rate of return (IRR) is positive.
- C. the IRR provides a positive net present value (NPV).
- D. the internal rate of return (IRR) is higher than the cost of capital.

Correct Answer: D.....**LOS: Reading 6-a**

The IRR needs to be above the hurdle rate, which is the cost of capital, for it to be attractive.

The NPV needs to be positive. The IRR is the discount rate that makes the NPV equal to zero.

Reference: CFA® Program Curriculum, Volume 1, pp. 216-221.

26. The following data is provided on the returns from a universe of mutual funds over the previous year.

	1st Quartile	2nd Quartile	3rd Quartile	4th Quartile
Return	8.0%	9.5%	9.8%	15.5%

Which of the following statements is supported by the data?

- A. The average fund return in the first quartile was 8%.
- B. The average fund return was between 9.5% and 9.8%.
- C. Three quarters of funds achieved returns less than or equal to 15.5%.
- D. One quarter of funds achieved returns that were less than or equal to 8%.

Correct Answer: D.....**LOS: Reading 7-e**

The first quartile is 8% which means that 25% of funds had returns of 8% or below, the 2nd quartile is 9.5% which means that 50% of funds had return of 9.5% and below and so on. We cannot conclude from the data the average returns for funds.

Reference: CFA® Program Curriculum, Volume 1, pp. 273-278.



27. An analyst estimates that there is a 75% probability that the stock market will rise in the next quarter. In the case that the market rises, ABC Corp. shares will have a 90% probability of also rising, in the case that the market is flat or declines he estimates that ABC Corp. shares have a 60% probability of declining. The probability of ABC Corp. shares rising is closest to:

- A. 65.0%.
 - B. 75.0%.
 - C. 77.5%.
 - D. 82.5%.
-

28. A stock market series is trading at 700 and is estimated to rise to 800 in one year's time. If the dividend payment on the stock market series over this period is 25 then the expected holding period return is closest to:

- A. 3.33%.
- B. 14.28%.
- C. 15.63%.
- D. 17.85%.



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27. An analyst estimates that there is a 75% probability that the stock market will rise in the next quarter. In the case that the market rises, ABC Corp. shares will have a 90% probability of also rising, in the case that the market is flat or declines he estimates that ABC Corp. shares have a 60% probability of declining. The probability of ABC Corp. shares rising is closest to:

- A. 65.0%.
- B. 75.0%.
- C. 77.5%.
- D. 82.5%.

Correct Answer: C**LOS: Reading 8-g**

Apply the total probability rule $P(A) = P(A|S1)P(S1) + P(A|S2)P(S2)$ where A is the case that ABC Corp. shares rise and S1 is that the market rises and S2 is that the market falls.

$$P(A) = (0.90 \times 0.75) + (0.40 \times 0.25) = 0.675 + 0.1 = 0.775$$

Reference: CFA® Program Curriculum, Volume 1, pp. 330-332.



28. A stock market series is trading at 700 and is estimated to rise to 800 in one year's time. If the dividend payment on the stock market series over this period is 25 then the expected holding period return is closest to:

- A. 3.33%.
- B. 14.28%.
- C. 15.63%.
- D. 17.85%.

Correct Answer: DLOS: Reading 6-b

The expected return is given by $E(R)$ where:

$$E(R) = (EV - BV + Div)/BV = 125/700 = 17.85\%$$

and $E(V)$ is end value, $B(V)$ is beginning value, and Div is the dividend.

Reference: CFA® Program Curriculum, Volume 1, pp. 221-222.



Study Session 03: Quantitative Methods: Application

This study session introduces the discrete and continuous probability distributions that are most commonly used to describe the behavior of random variables. Probability theory and calculations are widely applied in finance, for example, in the field of investment and project valuation and in financial risk management.

Furthermore, this session teaches how to estimate different parameters (e.g., mean and standard deviation) of a population if only a sample, rather than the whole population, can be observed. Hypothesis testing is a closely related topic. This session presents the techniques that can be applied to accept or reject an assumed hypothesis (null hypothesis) about various parameters of a population. Finally, you will also learn about the fundamentals of technical analysis. It is important that analysts properly understand the assumptions and limitations when applying these tools as mis-specified models or improperly used tools can result in misleading conclusions.

Reading 9: Common Probability Distributions

Reading 10: Sampling and Estimation

Reading 11: Hypothesis Testing

Reading 12: Technical Analysis



1. An analyst is collecting data on mutual fund performance. He estimates that the standard deviation of funds' returns is 4% and returns are independent across funds. To achieve a standard error of sample mean of 0.5% how many funds does he need to include in his sample?

- A. 8.
 - B. 32.
 - C. 64.
 - D. 128.
-

2. Which of the following statements is least accurate?

- A. The null hypothesis should always contain the equal sign.
- B. Type I error is accepting the null hypothesis when it is false.
- C. The level of significance is the probability of rejecting the null hypothesis when it is true.
- D. The null hypothesis is not rejected if sample data fails to produce evidence that it is false.



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1. An analyst is collecting data on mutual fund performance. He estimates that the standard deviation of funds' returns is 4% and returns are independent across funds. To achieve a standard error of sample mean of 0.5% how many funds does he need to include in his sample?

- A. 8.
- B. 32.
- C. 64.
- D. 128.

Correct Answer: C **LOS: Reading 10-e**

The standard error of sample mean is $\frac{\sigma}{\sqrt{n}}$. So $\sqrt{n} = 4\% / 0.5\%$
and $n = 64$

Reference: CFA® Program Curriculum, Volume 1, pp. 429-431.

2. Which of the following statements is least accurate?

- A. The null hypothesis should always contain the equal sign.
- B. Type I error is accepting the null hypothesis when it is false.
- C. The level of significance is the probability of rejecting the null hypothesis when it is true.
- D. The null hypothesis is not rejected if sample data fails to produce evidence that it is false.

Correct Answer: B..... **LOS: Reading 11-b**

A Type I error is rejecting the null hypothesis when it is true.

Reference: CFA® Program Curriculum, Volume 1, pp. 456-461.



3. A binomial distribution model is created to analyze the performance of a fund relative to an index over 36 trial periods. In each period there is a 60% probability of success which is defined as the fund matching or outperforming the index, in each period the performance is assumed to be independent. The mean of the binomial random variable is closest to:

- A. 0.60.
- B. 8.64.
- C. 14.4.
- D. 21.6.

4. An analyst does a test of a sample of 100 observations to determine whether the mean of a normally distributed population is less than or equal to zero. The z-value is calculated to be 1.95. At the 1% significance level which of the following should the analyst conclude:

- A. the z-value is not meaningful since insufficient observations have been made.
- B. reject the null hypothesis and accept the alternative hypothesis that the mean is significantly higher than zero.
- C. reject the null hypothesis and accept the alternative hypothesis that the mean is significantly lower than zero.
- D. do not reject the null hypothesis that the sample mean is less than or equal to zero and reject the alternative hypothesis.



64 Study Session 03:

3. A binomial distribution model is created to analyze the performance of a fund relative to an index over 36 trial periods. In each period there is a 60% probability of success which is defined as the fund matching or outperforming the index, in each period the performance is assumed to be independent. The mean of the binomial random variable is closest to:

- A. 0.60.
- B. 8.64.
- C. 14.4.
- D. 21.6.

Correct Answer: D..... **LOS: Reading 9-d**

The mean is np where n is the number of trials, 36, and p is the probability of success, 0.60, so the mean is $36 \times 0.60 = 21.6$

Reference: CFA® Program Curriculum, Volume 1, pp. 382-385.

4. An analyst does a test of a sample of 100 observations to determine whether the mean of a normally distributed population is less than or equal to zero. The z-value is calculated to be 1.95. At the 1% significance level which of the following should the analyst conclude:

- A. the z-value is not meaningful since insufficient observations have been made.
- B. reject the null hypothesis and accept the alternative hypothesis that the mean is significantly higher than zero.
- C. reject the null hypothesis and accept the alternative hypothesis that the mean is significantly lower than zero.
- D. do not reject the null hypothesis that the sample mean is less than or equal to zero and reject the alternative hypothesis.

Correct Answer: D..... **LOS: Reading 11-e**

The critical z-value for a one tailed test is 2.33, the z-value is below this so do not reject the null hypothesis.

Reference: CFA® Program Curriculum, Volume 1, pp. 466-474.



5 Which of the following would be seen as a buy signal by a contrary opinion technical analyst?

- A. Low mutual fund cash balances.
- B. OTC volume is high relative to volume on the NYSE.
- C. A low put/call ratio on the Chicago Board Options Exchange.
- D. The bearish sentiment index for investment advisory opinions is high

6. When a technical analyst notes that a stock has risen to a price range where she expects to see major sellers of the stock enter the market, then the stock is most likely to have:

- A. broken its trend line.
- B. reached a support level.
- C. reached a resistance level.
- D. broken through its moving average line from below.



66 Study Session 03:

- 5 Which of the following would be seen as a buy signal by a contrary opinion technical analyst?
- A. Low mutual fund cash balances.
 - B. OTC volume is high relative to volume on the NYSE.
 - C. A low put/call ratio on the Chicago Board Options Exchange.
 - D. The bearish sentiment index for investment advisory opinions is high

Correct Answer: D.....**LOS: Reading 12-c**

Contrarians believe that investment advisors are trend followers so the number of bears is greatest near the bottom of the market.

Reference: CFA® Program Curriculum, Volume 1, pp. 509-511.

6. When a technical analyst notes that a stock has risen to a price range where she expects to see major sellers of the stock enter the market, then the stock is most likely to have:
- A. broken its trend line.
 - B. reached a support level.
 - C. reached a resistance level.
 - D. broken through its moving average line from below.

Correct Answer: C.....**LOS: Reading 12-c**

A resistance level is when technical analysts would expect to see an increase in supply of stock (which has been overhanging the market) lead to selling pressure and price reversal.

Reference: CFA® Program Curriculum, Volume 1, pp. 515-516.



7. A sample of 100 observations is taken from a normal population, the sample mean is 50 and the population standard deviation is 6. The 99% confidence interval for the population mean is closest to:

- A. 48.46 up to 51.55.
- B. 48.82 up to 51.18.
- C. 49.34 up to 50.63.
- D. 49.52 up to 50.48.

8. When we are using a hypothesis test to test the variance of a single normally distributed population we should use the:

- A. t-test.
- B. z-test.
- C. F-test.
- D. chi-square test.



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7. A sample of 100 observations is taken from a normal population, the sample mean is 50 and the population standard deviation is 6. The 99% confidence interval for the population mean is closest to:

- A. 48.46 up to 51.55.
- B. 48.82 up to 51.18.
- C. 49.34 up to 50.63.
- D. 49.52 up to 50.48.

Correct Answer: A..... **LOS: Reading 10-j**

$$\begin{aligned} \text{99\% confidence interval for the mean is } & \bar{x} \pm \frac{2.575\sigma}{\sqrt{n}} \\ & 50 \pm \frac{2.575 \times 6}{\sqrt{100}} = 50 \pm 1.545 = 48.455 \text{ to } 51.455 \end{aligned}$$

Reference: CFA® Program Curriculum, Volume 1, pp. 433-441.

8. When we are using a hypothesis test to test the variance of a single normally distributed population we should use the:

- A. t-test.
- B. z-test.
- C. F-test.
- D. chi-square test.

Correct Answer: D..... **LOS: Reading 11-f**

The chi-square test is used to test the variance of a single normally distributed population.

Reference: CFA® Program Curriculum, Volume 1, pp. 482-484.



9. When a contrary opinion technical analyst sees a build-up of credit balances in brokerage accounts they would see this as:

- A. an indicator that is only relevant to a fundamental analyst.
 - B. a bearish signal for the market, since investors are negative on the market prospects.
 - C. a bullish signal for the market, since there are funds available to buy stocks in the market.
 - D. a bearish signal for the market, since it indicates a lack of funds available to buy stocks in the market.
-

10. Which of the following is least likely to be an assumption of technical analysis?

- A. The prices of securities move in long-term trends.
- B. Market values are determined by supply and demand.
- C. The prices of securities reflect all past market trading data.
- D. Changes in trends are the effect of shifts in supply and demand.



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9. When a contrary opinion technical analyst sees a build-up of credit balances in brokerage accounts they would see this as:

- A. an indicator that is only relevant to a fundamental analyst.
- B. a bearish signal for the market, since investors are negative on the market prospects.
- C. a bullish signal for the market, since there are funds available to buy stocks in the market.
- D. a bearish signal for the market, since it indicates a lack of funds available to buy stocks in the market.

Correct Answer: C **LOS: Reading 12-c**

High credit balances imply that investors are planning to invest the money in the short term so it is a bullish signal for the market.

Reference: CFA® Program Curriculum, Volume 1, pp. 509-511.

10. Which of the following is least likely to be an assumption of technical analysis?

- A. The prices of securities move in long-term trends.
- B. Market values are determined by supply and demand.
- C. The prices of securities reflect all past market trading data.
- D. Changes in trends are the effect of shifts in supply and demand.

Correct Answer: C **LOS: Reading 12-a**

Answer C is the weak form of the Efficient Market Hypothesis which says that all past price and trading information is reflected in current stock prices. The implication is that technical analysis does not improve returns.

Reference: CFA® Program Curriculum, Volume 1, pp. 504-506.



11. A coin has a 50% chance of landing head up and a 50% chance of landing tail up. What is the probability, if a coin is thrown four times, of it landing head up once or not at all?

- A. 25.00%.
- B. 31.25%.
- C. 37.50%.
- D. 40.00%.

12. The population is defined as the 1,500 employees of a company and the wages of the employees range from \$10.00 per hour to \$25.00 per hour with a mean of \$14.00 per hour. A sample of 100 employees is taken and the mean wage of the sample is \$12.50. The sampling error is closest to:

- A. -\$1.50.
- B. +\$1.50.
- C. - 10.7%.
- D. +10.7%.



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11. A coin has a 50% chance of landing head up and a 50% chance of landing tail up. What is the probability, if a coin is thrown four times, of it landing head up once or not at all?

- A. 25.00%.
- B. 31.25%.
- C. 37.50%.
- D. 40.00%.

Correct Answer: B..... LOS: Reading 9-d

Apply the binomial probability distribution formula where we are solving for $p(0)$ and $p(1)$.

$$p(0) = \frac{4!}{4! \times 0!} 0.5^0 (1 - 0.5)^4 = 0.0625$$

$$p(1) = \frac{4!}{(4-1)! \times 1!} 0.5^1 (1 - 0.5)^3 = 0.2500$$

$$p(0) + p(1) = 0.3125 \text{ or } 31.25\%$$

Reference: CFA® Program Curriculum, Volume 1, pp. 374-382.

12. The population is defined as the 1,500 employees of a company and the wages of the employees range from \$10.00 per hour to \$25.00 per hour with a mean of \$14.00 per hour. A sample of 100 employees is taken and the mean wage of the sample is \$12.50. The sampling error is closest to:

- A. - \$1.50.
- B. + \$1.50.
- C. - 10.7%.
- D. +10.7%.

Correct Answer: A..... LOS: Reading 10-a

The sampling error is $\bar{X} - \mu = \$12.50 - \$14.00 = -\$1.50$

Reference: CFA® Program Curriculum, Volume 1, p 423.



13. Which of the following statements concerning a multivariate distribution is least accurate?

- A. The distribution describes the probability of different outcomes for a group of random variables.
 - B. A multivariate distribution takes into account the correlation between the different variables.
 - C. A multivariate distribution describes the outcomes for a single random variable under different scenarios.
 - D. If the random variables are normally distributed it is usually assumed the multivariate distribution is normally distributed.
-

14. Which group of people believes that the adjustment of stock prices to new information takes the longest period of time?

- A. Technical analysts.
- B. Fundamental analysts.
- C. Active portfolio managers.
- D. Supporters of the efficient market hypothesis.



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13. Which of the following statements concerning a multivariate distribution is least accurate?

- A. The distribution describes the probability of different outcomes for a group of random variables.
- B. A multivariate distribution takes into account the correlation between the different variables.
- C. A multivariate distribution describes the outcomes for a single random variable under different scenarios.
- D. If the random variables are normally distributed it is usually assumed the multivariate distribution is normally distributed.

Correct Answer: C **LOS: Reading 9-f**

If it is a single random variable it is a univariate distribution.

Reference: CFA® Program Curriculum, Volume 1, p. 390.

14. Which group of people believes that the adjustment of stock prices to new information takes the longest period of time?

- A. Technical analysts.
- B. Fundamental analysts.
- C. Active portfolio managers.
- D. Supporters of the efficient market hypothesis.

Correct Answer: A **LOS: Reading 12-a**

Technical analysts believe that it takes a period of time for a new trend to establish itself.

Reference: CFA® Program Curriculum, Volume 1, pp. 504-506.



15. In hypothesis testing a test statistic is:

- A. the level of significance of the test.
 - B. always positive and indicates the power of the test.
 - C. the probability of correctly rejecting the null hypothesis.
 - D. a value which will decide whether to accept or reject the null hypothesis.
-

16. If the mean of a normal distribution is 0 and the standard deviation is 20, the probability of an observation lying between -40 and 20 is closest to:

- A. 13.6%.
- B. 40.9%.
- C. 81.8%.
- D. 95.4%.



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15. In hypothesis testing a test statistic is:

- A. the level of significance of the test.
- B. always positive and indicates the power of the test.
- C. the probability of correctly rejecting the null hypothesis.
- D. a value which will decide whether to accept or reject the null hypothesis.

Correct Answer: D..... LOS: Reading 11-b

A test statistic is calculated based on a sample and will be used to decide whether to accept or reject the null hypothesis, t and z-statistics are commonly used test statistics.

Reference: CFA® Program Curriculum, Volume 1, pp. 459-466.

16. If the mean of a normal distribution is 0 and the standard deviation is 20, the probability of an observation lying between -40 and 20 is closest to:

- A. 13.6%.
- B. 40.9%.
- C. 81.8%.
- D. 95.4%.

Correct Answer: C..... LOS: Reading 9-h

First, calculate the z-value of

$$-40: z = (X - \mu) / \sigma = -40 / 20 = -2.0$$

Therefore the area between 0 and -4 is 47.7, since 95.4% of observations lie within two standard deviations of the mean.

The z value of 20 is 1.

Therefore the area between 0 and 20 is 34.1, since 68.26% of observations lie within one standard deviation of the mean.

So the probability that a reading lies between -44 and 20 is 47.7% + 34.1% = 81.8%.

Reference: CFA® Program Curriculum, Volume 1, pp. 389-397.



17. In technical analysis the breadth of the stock market might be measured by:

- A. the confidence index.
- B. the moving-averages.
- C. the advance-decline ratio.
- D. credit balances versus debit balances in brokerage accounts.

18. Technical analysts are least likely to believe that they have the following advantages over fundamental analysts:

- A. they do not need to use financial statements.
- B. they can select the right timing for buying and selling securities.
- C. their decisions will not be affected by changes in investor sentiment.
- D. they have longer to make a decision following the release of new information.



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17. In technical analysis the breadth of the stock market might be measured by:

- A. the confidence index.
- B. the moving-averages.
- C. the advance-decline ratio.
- D. credit balances versus debit balances in brokerage accounts.

Correct Answer: C **LOS: Reading 12-c**

The breadth of the market looks at the number of issues that have increased versus the number that have declined; this information can be seen in the advance-decline ratio. It provides additional information to the market index which is often dominated by a small number of large stocks which can move the market in one direction even when the majority of issues are moving in the opposite direction.

Reference: CFA® Program Curriculum, Volume 1, pp. 513-514.

18. Technical analysts are least likely to believe that they have the following advantages over fundamental analysts:

- A. they do not need to use financial statements.
- B. they can select the right timing for buying and selling securities.
- C. their decisions will not be affected by changes in investor sentiment.
- D. they have longer to make a decision following the release of new information.

Correct Answer: C **LOS: Reading 12-b**

Changes in sentiment will affect supply and demand for stocks that, in technical analysis, are the determinants of stock price moves. A fundamental analyst, if depending on the financial statements, may not take into account sentiment changes.

Reference: CFA® Program Curriculum, Volume 1, pp. 506-507.



19. An analyst has extensively tested past stock data to identify a stock valuation model. He has looked at numerous variables and has arrived at a model, using six different variables, which he believes successfully identifies undervalued stocks. His analysis is likely to exhibit:

- A. look-ahead bias.
 - B. data-mining bias.
 - C. survivorship bias.
 - D. data-snooping bias.
-

20. The level of significance in hypothesis testing is the probability of:

- A. rejecting the null hypothesis when it is true.
- B. accepting the null hypothesis when it is false.
- C. rejecting the alternate hypothesis when it is true.
- D. the test result being relevant to the decision rule.



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19. An analyst has extensively tested past stock data to identify a stock valuation model. He has looked at numerous variables and has arrived at a model, using six different variables, which he believes successfully identifies undervalued stocks. His analysis is likely to exhibit:

- A. look-ahead bias.
- B. data-mining bias.
- C. survivorship bias.
- D. data-snooping bias.

Correct Answer: B..... LOS: Reading 10-k

Data-mining biases occur when an analyst searches through data to identify patterns or significant variables. It can be detected by doing out-of-sample tests which will often show the variable is not significant.

Reference: CFA® Program Curriculum, Volume 1, pp. 442-444.

20. The level of significance in hypothesis testing is the probability of:

- A. rejecting the null hypothesis when it is true.
- B. accepting the null hypothesis when it is false.
- C. rejecting the alternate hypothesis when it is true.
- D. the test result being relevant to the decision rule.

Correct Answer: A..... LOS: Reading 11-b

The level of significance is alpha or the probability of making a Type I error. This refers to the probability of rejecting the null hypothesis when it is true.

Reference: CFA® Program Curriculum, Volume 1, pp. 456-462.



21. A normal distribution has a mean of 25 and a standard deviation of 5. What is the standardized normal random variable representing an observation of 15?

- A. -2.00.
- B. 1.67.
- C. 2.00.
- D. 3.00.

22. If mutual fund cash positions rise to 13% of the net asset value of the funds, then a contrary-opinion technical analyst would see this as a:

- A. sell signal since it indicates that the majority of investors are bearish.
- B. buy signal since it indicates that the majority of investors are bearish.
- C. sell signal since it means that they are receiving large cash flows into the funds.
- D. sell signal since it means that they are raising cash to meet redemptions from the fund.



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21. A normal distribution has a mean of 25 and a standard deviation of 5. What is the standardized normal random variable representing an observation of 15?

- A. -2.00.
- B. 1.67.
- C. 2.00.
- D. 3.00.

Correct Answer: A..... **LOS: Reading 9-h**

$$Z = \frac{X - \mu}{\sigma} = \frac{15 - 25}{5} = -2.0$$
 which is the number of standard deviations of the observation below the mean.

Reference: CFA® Program Curriculum, Volume 1, pp. 389-397.

22. If mutual fund cash positions rise to 13% of the net asset value of the funds, then a contrary-opinion technical analyst would see this as a:

- A. sell signal since it indicates that the majority of investors are bearish.
- B. buy signal since it indicates that the majority of investors are bearish.
- C. sell signal since it means that they are receiving large cash flows into the funds.
- D. sell signal since it means that they are raising cash to meet redemptions from the fund.

Correct Answer: B..... **LOS: Reading 12-c**

A contrarian would take the opposite view to the majority of investors and high cash balances indicate that mutual fund managers, who are an indicator of institutional investors, are bearish. Also high cash balances indicate future buying power of the funds.

Reference: CFA® Program Curriculum, Volume 1, pp. 509-511.



23. A confidence interval is:

- A. the size of the sample taken as a percentage of the population size.
 - B. the probability that a population parameter will lie within a certain range.
 - C. a range of values in which the population parameter falls with a specified probability.
 - D. the probability that the point estimate as an estimate of the population parameter is correct.
-

24. A support level in technical analysis is a price at which an increase in:

- A. supply of stock will reverse a rising trend.
- B. supply of stock will reverse a declining trend.
- C. demand for a stock will reverse a rising trend.
- D. demand for a stock will reverse a declining trend.



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23. A confidence interval is:

- A. the size of the sample taken as a percentage of the population size.
- B. the probability that a population parameter will lie within a certain range.
- C. a range of values in which the population parameter falls with a specified probability.
- D. the probability that the point estimate as an estimate of the population parameter is correct.

Correct Answer: C **LOS: Reading 10-f**

A confidence interval is simply an interval or range where we expect to find, with a specified probability, the population parameter.

Reference: CFA® Program Curriculum, Volume 1, p. 433.

24. A support level in technical analysis is a price at which an increase in:

- A. supply of stock will reverse a rising trend.
- B. supply of stock will reverse a declining trend.
- C. demand for a stock will reverse a rising trend.
- D. demand for a stock will reverse a declining trend.

Correct Answer: D **LOS: Reading 12-c**

A support level occurs when buyers come into the market and support the price of a stock. Often this happens when the price has previously risen then fallen back due to profit taking. At this point buyers, who perhaps missed earlier opportunities to buy, come back to the market leading to a surge in demand and the price increasing.

Reference: CFA® Program Curriculum, Volume 1, p. 514.



25. A dice is thrown four times, what is the probability of throwing exactly one six?

(Assume the dice has an equal chance of showing a 1, 2, 3, 4, 5 or 6.)

- A. 9.7%.
 - B. 16.7%.
 - C. 25.0%.
 - D. 38.6%.
-

26. A hypothesis is a statement about a:

- A. sample statistic.
- B. sample parameter.
- C. population statistic.
- D. population parameter.



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25. A dice is thrown four times, what is the probability of throwing exactly one six?

(Assume the dice has an equal chance of showing a 1, 2, 3, 4, 5 or 6.)

- A. 9.7%.
- B. 16.7%.
- C. 25.0%.
- D. 38.6%.

Correct Answer: D..... LOS: Reading 9-d

This is a binomial probability distribution so to calculate the probability of x successes from n trials, when the trials are independent and the probability of success across trials is constant, use the formula:

$$p(x) = \frac{n!}{(n-x)!x!} p^x (1-p)^{n-x}$$

where

- n = number of trials
- x = number of observed successes
- p = probability of success

$$p(1) = \frac{4!}{1!3!} 0.167^1 (1-0.167)^3 = 0.386$$

Reference: CFA® Program Curriculum, Volume 1, pp. 374-382.

26. A hypothesis is a statement about a:

- A. sample statistic.
- B. sample parameter.
- C. population statistic.
- D. population parameter.

Correct Answer: D..... LOS: Reading 11-a

A hypothesis is a statement about a population parameter. We use data from a sample to test whether we should accept or reject the hypothesis.

Reference: CFA® Program Curriculum, Volume 1, pp. 456-457.



27. A manager is testing to see whether a higher number of widgets being manufactured per hour are faulty. Previously 5 widgets per hour were faulty. He takes a sample of 50 hours production and the mean number found faulty is 5.5, with a standard deviation of 1.25. Using the z-test he can conclude that:

- A. at both the 1% and 5% significance levels there is evidence that a higher number of widgets are faulty.
 - B. at both the 1% and 5% significance levels there is no evidence that a higher number of widgets are faulty.
 - C. at the 1% significance level, but not at the 5% significance level, there is evidence that a higher number of widgets are faulty.
 - D. at the 5% significance level, but not at the 1% significance level, there is evidence that a higher number of widgets are faulty.
-

28. In hypothesis testing the probability of rejecting the null hypothesis when it is true is called the:

- A. test statistic.
- B. decision rule.
- C. alternate hypothesis.
- D. level of significance.



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27. A manager is testing to see whether a higher number of widgets being manufactured per hour are faulty. Previously 5 widgets per hour were faulty. He takes a sample of 50 hours production and the mean number found faulty is 5.5, with a standard deviation of 1.25. Using the z-test he can conclude that:

- A. at both the 1% and 5% significance levels there is evidence that a higher number of widgets are faulty.
- B. at both the 1% and 5% significance levels there is no evidence that a higher number of widgets are faulty.
- C. at the 1% significance level, but not at the 5% significance level, there is evidence that a higher number of widgets are faulty.
- D. at the 5% significance level, but not at the 1% significance level, there is evidence that a higher number of widgets are faulty.

Correct Answer: A **LOS: Reading 11-e**

Set the null hypothesis as being that the mean is less than or equal to 5.0.

$$z = (5.5 - 5.0) \times \frac{7.07}{1.25} = 2.83$$

This is more than 2.33 (the critical value for the 1% significance level, for a one-tailed test) and more than 1.65 (the critical value for the 5% significance level). So reject the null hypothesis at both the 1% level and the 5% level.

Reference: CFA® Program Curriculum, Volume 1, pp. 466-474.



28. In hypothesis testing the probability of rejecting the null hypothesis when it is true is called the:

- A. test statistic.
- B. decision rule.
- C. alternate hypothesis.
- D. level of significance.

Correct Answer: D **LOS: Reading 11-b**

The level of significance is the probability of a Type I error, of rejecting the null hypothesis when it is true.

Reference: CFA® Program Curriculum, Volume 1, pp. 456-461.



Study Session 04: Economics:

Microeconomic Analysis

This study session focuses on microeconomic concepts and how firms are affected by these concepts. One of the main concepts related to the equilibrium between demand and supply is elasticity, which measures the dependency between demand and supply and the impact of changes in either on the equilibrium price level. A second key concept is efficiency, which is a measure of the firm's "optimal" output given its cost and revenue functions. Understanding these concepts enables analysts to differentiate among various companies on an individual level, and to determine their attractiveness for an investor.

Reading 13: Elasticity

Reading 14: Efficiency and Equity

Reading 15: Markets in Action

Reading 16: Organizing Production

Reading 17: Output and Costs



1. One of the arguments against utilitarianism is:

- A. high tax rates make people work less.
- B. fairness can only be achieved with state ownership of key assets.
- C. utility curves are not efficient in describing consumer preferences.
- D. the marginal benefit of receiving an extra dollar is higher for poor people.

2. Which of the following concentration ratios for a firm is most likely to indicate that the firm is operating in an oligopoly?

Four-firm ratio	Herfindahl-Hirschman Index
A. 30%	1,500
B. 40%	3,000
C. 70%	2,200
D. 90%	1,200



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1. One of the arguments against utilitarianism is:
- A. high tax rates make people work less.
 - B. fairness can only be achieved with state ownership of key assets.
 - C. utility curves are not efficient in describing consumer preferences.
 - D. the marginal benefit of receiving an extra dollar is higher for poor people.

Correct Answer: A **LOS: Reading 14-f**

Utilitarianism proposes that money should be transferred from the rich to the poor. One of the arguments against this is that it reduces the size of the economic pie since the rich will work or save less. The other argument is that the cost of administration or tax collection causes inefficiency.

Reference: CFA® Program Curriculum, Volume 2, pp. 48-51.

2. Which of the following concentration ratios for a firm is most likely to indicate that the firm is operating in an oligopoly?

	Four-firm ratio	Herfindahl-Hirschman Index
A.	30%	1,500
B.	40%	3,000
C.	70%	2,200
D.	90%	1,200

Correct Answer: C **LOS: Reading 16-g**

A four-firm measure of over 60%, and a HHI index of over 1,800 indicate an oligopoly, so C is the best answer.

Reference: CFA® Program Curriculum, Volume 2, pp. 105-110.



3. There are two companies in an industry that produce the same product. Their annual inputs are shown below:

	Labor	Capital
Company A	5	100
Company B	10	70

Labor costs \$40,000 per annum and capital costs \$10,000 per annum.

Which statement is the most accurate?

- A. Only company B is both technologically and economically efficient.
 - B. Only company A is both technologically and economically efficient.
 - C. Companies A and B are both technologically and economically efficient.
 - D. Companies A and B are both technologically efficient but only B is economically efficient.
-

4. The cross elasticity for two complementary products that are very closely related is:

- A. a relatively large positive number.
- B. a relatively small positive number.
- C. a relatively large negative number.
- D. a relatively small negative number.



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3. There are two companies in an industry that produce the same product. Their annual inputs are shown below:

	Labor	Capital
Company A	5	100
Company B	10	70

Labor costs \$40,000 per annum and capital costs \$10,000 per annum.

Which statement is the most accurate?

- A. Only company B is both technologically and economically efficient.
- B. Only company A is both technologically and economically efficient.
- C. Companies A and B are both technologically and economically efficient.
- D. Companies A and B are both technologically efficient but only B is economically efficient.

Correct Answer: D.....**LOS: Reading 16-c**

Both firms are technologically efficient since they use the least amount of inputs, although the mix of inputs is different.

The cost of inputs for company A is $\$200,000 + \$1,000,000 = \$1,200,000$, for company B $\$400,000 + \$700,000 = \$1,100,000$. Therefore B is economically efficient.

Reference: CFA® Program Curriculum, Volume 2, pp. 96-99.

4. The cross elasticity for two complementary products that are very closely related is:

- A. a relatively large positive number.
- B. a relatively small positive number.
- C. a relatively large negative number.
- D. a relatively small negative number.

Correct Answer: C.....**LOS: Reading 13-a**

Cross elasticity measures the change in demand of one quantity for a percentage price move of the complementary product. If they are close complements this will be high. Cross elasticity is negative, if the price of one product rises, the demand for the other product falls and vice versa.

Reference: CFA® Program Curriculum, Volume 2, pp. 19-21.



5. Which of the following is least likely to lead to a shift in the demand curve for a product? A change in:

- A. consumer preferences.
 - B. the price of the product.
 - C. the price of a substitute product.
 - D. distribution of consumer incomes.
-

6. The supply of a product which is made from a resource with low resource mobility is generally:

- A. elastic in both the short and long run.
- B. equally inelastic in the short and long run.
- C. elastic in the short run and inelastic in the long run.
- D. inelastic in the short run but more elastic in the long run.



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5. Which of the following is least likely to lead to a shift in the demand curve for a product? A change in:

- A. consumer preferences.
- B. the price of the product.
- C. the price of a substitute product.
- D. distribution of consumer incomes.

Correct Answer: B.....**LOS: Reading 13-a**

Price will lead to a change in the quantity demanded along the same demand curve. The other factors will lead to a shift in the entire demand curve.

Reference: CFA® Program Curriculum, Volume 2, pp. 10-23.

6. The supply of a product which is made from a resource with low resource mobility is generally:

- A. elastic in both the short and long run.
- B. equally inelastic in the short and long run.
- C. elastic in the short run and inelastic in the long run.
- D. inelastic in the short run but more elastic in the long run.

Correct Answer: D.....**LOS: Reading 13-a**

Low resource mobility will make the supply relatively inelastic in the short run since the resource cannot be easily transferred to another use. Generally long-run elasticity is more elastic than short-run elasticity, as suppliers have time to adjust to the change in prices.

Reference: CFA® Program Curriculum, Volume 2, pp. 24-27.



7. If the price elasticity of demand for a product is elastic, it means that:
- A. total expenditure on the product will remain constant as the price changes.
 - B. price and total expenditure on the product will move in the same direction.
 - C. a percent increase in prices leads to a larger percent reduction in the amount purchased.
 - D. a percent increase in prices leads to a smaller percent reduction in the amount purchased.
-
8. Following contamination of drinking water and a surge in demand for bottled water the government decides to buy all available bottled water at the higher market price, sell this water at pre-contamination prices, and ration the water sold to each individual. Which statement best describes the position?
- A. The consumer surplus is eliminated if the water is rationed.
 - B. All participants in the economy will benefit from the government action.
 - C. The consumer and producer surpluses are reallocated due to the government action.
 - D. The producer surplus is eliminated if the water is sold at the pre-contamination price to consumers.



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7. If the price elasticity of demand for a product is elastic, it means that:
- A. total expenditure on the product will remain constant as the price changes.
 - B. price and total expenditure on the product will move in the same direction.
 - C. a percent increase in prices leads to a larger percent reduction in the amount purchased.
 - D. a percent increase in prices leads to a smaller percent reduction in the amount purchased.

Correct Answer: C **LOS: Reading 13-b**

The amount purchased will be highly sensitive to price changes; this will mean that the price and total expenditure on the product will move in opposite directions.

Reference: CFA® Program Curriculum, Volume 2, pp. 15-16.

8. Following contamination of drinking water and a surge in demand for bottled water the government decides to buy all available bottled water at the higher market price, sell this water at pre-contamination prices, and ration the water sold to each individual. Which statement best describes the position?
- A. The consumer surplus is eliminated if the water is rationed.
 - B. All participants in the economy will benefit from the government action.
 - C. The consumer and producer surpluses are reallocated due to the government action.
 - D. The producer surplus is eliminated if the water is sold at the pre-contamination price to consumers.

Correct Answer: C **LOS: Reading 14-f**

There will still be a consumer surplus (they are buying water at a price below the new market price), there will still be a producer surplus since they will sell to the government at a higher price. Not all participants benefit since taxpayers will be paying part of the cost. C is the best answer, the consumer and producer surpluses are reallocated by the government action.

Reference: CFA® Program Curriculum, Volume 2, pp. 48-54.



9. Which one of the following statements is most accurate?
- A. Demand for products is usually more elastic in the long run than short run.
 - B. Demand for products is usually more elastic in the short run than long run.
 - C. Demand elasticity for products will usually increase more rapidly in the long run.
 - D. Demand elasticity for products will usually decrease more rapidly in the long run.
-

10. Luxury goods usually have a:
- A. low income elasticity of demand.
 - B. high income elasticity of demand.
 - C. negative income elasticity of demand.
 - D. abnormal income elasticity of demand.



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9. Which one of the following statements is most accurate?

- A. Demand for products is usually more elastic in the long run than short run.
- B. Demand for products is usually more elastic in the short run than long run.
- C. Demand elasticity for products will usually increase more rapidly in the long run.
- D. Demand elasticity for products will usually decrease more rapidly in the long run.

Correct Answer: A**LOS: Reading 13-a**

Demand will be more elastic in the long run since consumers will have had more time to adjust to a price change.

Reference: CFA® Program Curriculum, Volume 2, pp. 17-19.

10. Luxury goods usually have a:

- A. low income elasticity of demand.
- B. high income elasticity of demand.
- C. negative income elasticity of demand.
- D. abnormal income elasticity of demand.

Correct Answer: B**LOS: Reading 13-a**

Luxury goods usually have a high (greater than one) income elasticity which means that as incomes rise, the demand for these goods rises at an even faster rate.

Reference: CFA® Program Curriculum, Volume 2, pp. 21-23.



11. When a government imposes a minimum wage above the equilibrium wage, which of the following best describes the impact of its action?

- A. There is a reallocation of a portion of the producer surplus to the worker surplus.
 - B. The worker surplus is eliminated as workers spend time and money in job searches.
 - C. The producer surplus is reduced as they are required to pay marginal workers a minimum wage rather than the equilibrium wage.
 - D. There will be a reduction in unemployment as workers will be able to find work, although they may only be paid the minimum wage.
-

12. A government decides to subsidize the production of cars in a country. Which of the following is least likely to happen as a result of the subsidy?

- A. The price of cars will drop.
- B. There is an increase in the supply of cars.
- C. There is a deadweight loss due to overproduction of cars.
- D. The marginal cost of car production drops below marginal benefit.



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11. When a government imposes a minimum wage above the equilibrium wage, which of the following best describes the impact of its action?

- A. There is a reallocation of a portion of the producer surplus to the worker surplus.
- B. The worker surplus is eliminated as workers spend time and money in job searches.
- C. The producer surplus is reduced as they are required to pay marginal workers a minimum wage rather than the equilibrium wage.
- D. There will be a reduction in unemployment as workers will be able to find work, although they may only be paid the minimum wage.

Correct Answer: C **LOS: Reading 15-b**

The producer and worker surplus will both be reduced as a deadweight loss is created. Unemployment will rise as marginal workers fail to find jobs.

Reference: CFA® Program Curriculum, Volume 2, pp. 66-71.

12. A government decides to subsidize the production of cars in a country. Which of the following is least likely to happen as a result of the subsidy?

- A. The price of cars will drop.
- B. There is an increase in the supply of cars.
- C. There is a deadweight loss due to overproduction of cars.
- D. The marginal cost of car production drops below marginal benefit.

Correct Answer: D **LOS: Reading 15-d**

The quantity of cars produced and the price of cars sold drops leading to overproduction, and marginal cost is higher than marginal benefit leading to a deadweight loss.

Reference: CFA® Program Curriculum, Volume 2, pp. 79-80.



13. Which of the following is an accurate description of an owner's liability and tax position in the U.S. for different business structures?

	Has unlimited liability	Pays taxes at two levels
A.	corporation	corporation
B.	corporation	partnership
C.	partnership	corporation
D.	partnership	partnership

14. Which of the following is least likely to be included in opportunity costs of a firm owned by Julia Painter?

- A. Normal profits.
- B. Bank interest costs.
- C. Painter's interest forgone.
- D. Accounting depreciation costs.



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13. Which of the following is an accurate description of an owner's liability and tax position in the U.S. for different business structures?

	Has unlimited liability	Pays taxes at two levels
A.	corporation	corporation
B.	corporation	partnership
C.	partnership	corporation
D.	partnership	partnership

Correct Answer: CLOS: Reading 16-e

A partner has unlimited liability but only pays tax as owner's income. An owner of a corporation has limited liability but is taxed at both the corporate and individual level.

Reference: CFA® Program Curriculum, Volume 2, pp. 101-102.

14. Which of the following is least likely to be included in opportunity costs of a firm owned by Julia Painter?

- A. Normal profits.
- B. Bank interest costs.
- C. Painter's interest forgone.
- D. Accounting depreciation costs.

Correct Answer: D.....LOS: Reading 16-a

Opportunity costs include all explicit and implicit costs. Economic rather than accounting depreciation would be included.

Reference: CFA® Program Curriculum, Volume 2, pp. 92-97.



15. In the short run, as a company increases production levels towards operating at full capacity:

- A. marginal costs will generally fall but average total costs will rise.
- B. marginal costs will generally rise but average total costs will fall.
- C. marginal costs will generally fall and average total costs will also fall.
- D. marginal costs will generally rise and average total costs will also rise.

16. If a company is unable to expand the size of its production facilities it means that as more and more units of a variable resource are used output will eventually:

- A. decrease and marginal costs will increase towards average total costs.
- B. increase at a decreasing rate and marginal costs will exceed average total costs.
- C. increase at a decreasing rate and marginal costs will be equal to average total costs.
- D. increase at a decreasing rate and average fixed costs will increase as a percentage of total costs.



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15. In the short run, as a company increases production levels towards operating at full capacity:

- A. marginal costs will generally fall but average total costs will rise.
- B. marginal costs will generally rise but average total costs will fall.
- C. marginal costs will generally fall and average total costs will also fall.
- D. marginal costs will generally rise and average total costs will also rise.

Correct Answer: D..... **LOS: Reading 17-c**

Marginal costs are the change in total costs to produce an additional unit of output. As a firm approaches operating at full capacity, marginal costs will rise and average total costs will therefore also rise.

Reference: CFA® Program Curriculum, Volume 2, pp. 129-133

16. If a company is unable to expand the size of its production facilities it means that as more and more units of a variable resource are used output will eventually:

- A. decrease and marginal costs will increase towards average total costs.
- B. increase at a decreasing rate and marginal costs will exceed average total costs.
- C. increase at a decreasing rate and marginal costs will be equal to average total costs.
- D. increase at a decreasing rate and average fixed costs will increase as a percentage of total costs.

Correct Answer: B..... **LOS: Reading 17-b**

The law of diminishing returns states that as more and more units of a variable resource are allocated to production they will eventually increase output at a decreasing rate. Mathematically, as the marginal costs increase, they will become higher than the average total cost, thereby increasing the average total cost.

Reference: CFA® Program Curriculum, Volume 2, pp. 129-133.



17. Which of the following statements regarding the relationship between costs of larger firms relative to costs of smaller firms is least accurate?

- A. Constant returns to scale can exist in an industry for different sizes of firm.
- B. Firms that are smaller than the minimum efficient size have higher average total unit costs.
- C. Long-run average total unit costs will always be lower for large firms due to economies of scale.
- D. Economies of scale refer to reductions in a firm's unit cost due to use of large factories with large volumes of output.

18. It costs \$20 a manufacturer to produce the first kettle and \$50 to produce the 10,000th kettle, assume the cost increases linearly from \$20 to \$50. The manufacturer sells 10,000 kettles at a unit price of \$50. Its producer surplus is closest to:

- A. \$0.
- B. \$150,000.
- C. \$250,000.
- D. \$300,000.



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17. Which of the following statements regarding the relationship between costs of larger firms relative to costs of smaller firms is least accurate?

- A. Constant returns to scale can exist in an industry for different sizes of firm.
- B. Firms that are smaller than the minimum efficient size have higher average total unit costs.
- C. Long-run average total unit costs will always be lower for large firms due to economies of scale.
- D. Economies of scale refer to reductions in a firm's unit cost due to use of large factories with large volumes of output.

Correct Answer: C **LOS: Reading 17-d**

Large firms are not always more efficient. For example, it is often harder to motivate the work force in a large firm and communication between employer and employees becomes harder.

Reference: CFA® Program Curriculum, Volume 2, pp. 137-140.

18. It costs \$20 a manufacturer to produce the first kettle and \$50 to produce the 10,000th kettle, assume the cost increases linearly from \$20 to \$50. The manufacturer sells 10,000 kettles at a unit price of \$50. Its producer surplus is closest to:

- A. \$0.
- B. \$150,000.
- C. \$250,000.
- D. \$300,000.

Correct Answer: B..... **LOS: Reading 14-d**

The producer surplus is \$30 on the first kettle decreasing steadily to \$0 on the 10,000th kettle, so the area of the producer surplus triangle is $10,000 \times (\$30 + 0)/2 = \$150,000$.

Reference: CFA® Program Curriculum, Volume 2, pp. 42-42.



19. When the government imposes a tax on a product, the buyers of the product will generally pay most of the tax if:

	Demand	Supply
A.	Elastic	Elastic
B.	Elastic	Inelastic
C.	Inelastic	Elastic
D.	Inelastic	Inelastic

20. A company purchase a piece of machinery five years ago which had an estimated useful life of ten years. The machine cost \$1,000,000 and is being depreciated in the accounts at \$100,000 per year. The other costs associated with using the machine are \$300,000 per year, and the annual revenue generated from using the machine is \$325,000 per year. The machine has no alternative use or scrap value. The company should

- A. continue to operate the machine.
- B. stop using the machine since it is generating an economic loss.
- C. stop using the machine since it is generating an accounting loss.
- D. stop using the machine since the opportunity cost is more than the accounting profit.



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19. When the government imposes a tax on a product, the buyers of the product will generally pay most of the tax if:

- | | Demand | Supply |
|----|-----------|-----------|
| A. | Elastic | Elastic |
| B. | Elastic | Inelastic |
| C. | Inelastic | Elastic |
| D. | Inelastic | Inelastic |

Correct Answer: C **LOS: Reading 15-c**

Inelastic demand means that buyers will continue to buy the product even at a higher price including tax. If supply is elastic producers are willing to increase the quantity to reflect the higher price which includes tax, so again buyers pay most of the tax.

Reference: CFA® Program Curriculum, Volume 2, pp. 74-77.

20. A company purchase a piece of machinery five years ago which had an estimated useful life of ten years. The machine cost \$1,000,000 and is being depreciated in the accounts at \$100,000 per year. The other costs associated with using the machine are \$300,000 per year, and the annual revenue generated from using the machine is \$325,000 per year. The machine has no alternative use or scrap value. The company should

- A. continue to operate the machine.
- B. stop using the machine since it is generating an economic loss.
- C. stop using the machine since it is generating an accounting loss.
- D. stop using the machine since the opportunity cost is more than the accounting profit.

Correct Answer: A **LOS: Reading 16-a**

Although the machine is generating an accounting loss it generates an economic profit of \$25,000. This is because there is no economic depreciation charge - the opportunity cost of using the machine is zero, the cost of the machine is a sunk cost and it has no alternative use. Therefore the company should continue to operate the machine.

Reference: CFA® Program Curriculum, Volume 2, pp. 92-94.



21. It is noticed that a small change in price has a big impact on demand for a product. This means the demand is:

- A. elastic, with a flat demand curve.
 - B. elastic, with a steep demand curve.
 - C. inelastic, with a flat demand curve.
 - D. inelastic, with a steep demand curve.
-

22. Which of the following would lead to a shift in the demand curve for wine?

- A. Beer prices increase.
- B. An increase in bottling costs.
- C. An increase in the price of wine.
- D. A rapid increase in the volumes of wine being produced in Eastern Europe.



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21. It is noticed that a small change in price has a big impact on demand for a product. This means the demand is:

- A. elastic, with a flat demand curve.
- B. elastic, with a steep demand curve.
- C. inelastic, with a flat demand curve.
- D. inelastic, with a steep demand curve.

Correct Answer: A **LOS: Reading 13-a**

Demand is elastic since it is highly responsive to a change in price, this will lead to a flat demand curve.

Reference: CFA® Program Curriculum, Volume 2, pp. 13-15.

22. Which of the following would lead to a shift in the demand curve for wine?

- A. Beer prices increase.
- B. An increase in bottling costs.
- C. An increase in the price of wine.
- D. A rapid increase in the volumes of wine being produced in Eastern Europe.

Correct Answer: A **LOS: Reading 13-a**

B and D mainly impact on the supply of wine. C affects the change in quantity demanded (downwards) and therefore leads to a movement along the same demand curve.

Reference: CFA® Program Curriculum, Volume 2, pp. 17-19.



23. If the elasticity of supply for a good is relatively inelastic it means that:

- A. a percentage increase in price will result in a smaller percentage reduction in quantity supplied.
 - B. a percentage increase in price will result in a smaller percentage reduction in the sales revenue.
 - C. a percentage increase in price will result in a larger percentage reduction in quantity supplied.
 - D. a percentage increase in price will result in a larger percentage reduction in the sales revenue.
-

24. If the price of televisions is increased by 10% from \$500 to \$550 then a manufacturer increases supply from 100,000 units to 120,000 units. The elasticity of supply is closest to:

- A. 0.50.
- B. 0.53.
- C. 1.91.
- D. 2.00.



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23. If the elasticity of supply for a good is relatively inelastic it means that:

- A. a percentage increase in price will result in a smaller percentage reduction in quantity supplied.
- B. a percentage increase in price will result in a smaller percentage reduction in the sales revenue.
- C. a percentage increase in price will result in a larger percentage reduction in quantity supplied.
- D. a percentage increase in price will result in a larger percentage reduction in the sales revenue.

Correct Answer: A **LOS: Reading 13-a**

Elasticity of supply links prices to quantity, not to sales revenue. Inelastic means the percentage movement in price is larger than the percentage increase in quantity.

Reference: CFA® Program Curriculum, Volume 2, pp. 24-27.

24. If the price of televisions is increased by 10% from \$500 to \$550 then a manufacturer increases supply from 100,000 units to 120,000 units. The elasticity of supply is closest to:

- A. 0.50.
- B. 0.53.
- C. 1.91.
- D. 2.00.

Correct Answer: C **LOS: Reading 13-b**

$$\text{Price elasticity of supply} = \frac{\% \Delta Q_{\text{Supp}}}{\% \Delta P}$$

where

Q_{Supp} = quantity supplied

P = price

$\% \Delta Q_{\text{Supp}}$ = percentage change in quantity demanded, this is $\Delta Q / Q_{\text{ave}}$.

$$\frac{\% \Delta Q}{\% \Delta P} = \frac{20/110}{50/525} = 1.91$$

Reference: CFA® Program Curriculum, Volume 2, p. 25.



25. If two goods are perfect substitutes, then the cross elasticity of demand will be:

- A. one.
- B. zero.
- C. infinity.
- D. negative.

26. If the elasticity of supply and demand for a product both decrease, this will tend to lead to:

- | | Consumer Surplus | Producer surplus |
|----|------------------|------------------|
| A. | Increase | Increase |
| B. | Increase | Decrease |
| C. | Decrease | Increase |
| D. | Decrease | Decrease |



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25. If two goods are perfect substitutes, then the cross elasticity of demand will be:

- A. one.
- B. zero.
- C. infinity.
- D. negative.

Correct Answer: C **LOS: Reading 13-a**

If they are perfect substitutes any increase in the price of one good will cause an infinitely large increase in demand for the other good so the cross elasticity of demand is infinite.

Reference: CFA® Program Curriculum, Volume 2, pp. 18-20.

26. If the elasticity of supply and demand for a product both decrease, this will tend to lead to:

- | | Consumer Surplus | Producer surplus |
|----|------------------|------------------|
| A. | Increase | Increase |
| B. | Increase | Decrease |
| C. | Decrease | Increase |
| D. | Decrease | Decrease |

Correct Answer: A **LOS: Reading 14-d**

If elasticity of supply and demand both decrease it will lead to a steepening of the supply and demand curves which will expand the portion to the left of the equilibrium point. This portion represents the consumer and producer surpluses.

Reference: CFA® Program Curriculum, Volume 2, pp. 43-45.



27. When a firm increases its output, its total production costs increase at an increasing rate. It is likely that the firm has:

- A. high fixed costs.
 - B. economies of scale.
 - C. diseconomies of scale.
 - D. constant returns to scale.
-

28. Which of the following is the mechanism least appropriate to be used for motivating managers to act in the best interests of stockholders?

- A. Long-term contracts.
- B. High annual salaries.
- C. Executive stock options.
- D. Incentive pay based on profits.



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27. When a firm increases its output, its total production costs increase at an increasing rate. It is likely that the firm has:

- A. high fixed costs.
- B. economies of scale.
- C. diseconomies of scale.
- D. constant returns to scale.

Correct Answer: C **LOS: Reading 17-d**

When an increase in output leads to total costs increasing at an increasing rate it indicates that average total costs are increasing and there are diseconomies of scale.

Reference: CFA® Program Curriculum, Volume 2, pp. 137-139.



28. Which of the following is the mechanism least appropriate to be used for motivating managers to act in the best interests of stockholders?

- A. Long-term contracts.
- B. High annual salaries.
- C. Executive stock options.
- D. Incentive pay based on profits.

Correct Answer: BLOS: Reading 16-d

High annual salaries will not be so strong an incentive as providing a reward directly linked to ownership or profits of the firm.

Reference: CFA® Program Curriculum, Volume 2, p. 101.



Study Session 05: Economics:

Market Structure and Macroeconomic Analysis

This study session first compares and contrasts the different market structures in which firms operate. The market environment influences the price a firm can demand for its goods or services. Among the most important of these market forms are monopoly and perfect competition, although monopolistic competition and oligopoly are also covered.

The study session then introduces the macroeconomic concepts that have an impact on all firms in the same environment, be it a country, a group of related countries, or a particular industry. The readings explain the business cycle, and how to forecast changes in the business cycle and the impact on, among other things, price levels and profitability. The study session concludes by describing how an economy's aggregate supply and aggregate demand are determined.

Reading 18: Perfect Competition

Reading 19: Monopoly

Reading 20: Monopolistic Competition and Oligopoly

Reading 21: Demand and Supply in Factor Markets

Reading 22: Monitoring Cycles, Jobs, and the Price Level

Reading 23: Aggregate Supply and Aggregate Demand



1. A railway company provides low fares to travelers prepared to start their journey after 10 am. This is an example of:

- A. collusion.
 - B. profiteering.
 - C. rent seeking.
 - D. price discrimination.
-

2. A sustained rise in interest rates will tend to lead to a change in demand for:

- | | Physical capital | Financial capital |
|----|------------------|-------------------|
| A. | Increase | Increase |
| B. | Increase | Decrease |
| C. | Decrease | Increase |
| D. | Decrease | Decrease |



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1. A railway company provides low fares to travelers prepared to start their journey after 10 am.

This is an example of:

- A. collusion.
- B. profiteering.
- C. rent seeking.
- D. price discrimination.

Correct Answer: D.....LOS: Reading 19-c

Price discrimination is when a seller charges different customers different prices for the same product or service.

Reference: CFA® Program Curriculum, Volume 2, pp. 191-193.

2. A sustained rise in interest rates will tend to lead to a change in demand for:

- | | Physical capital | Financial capital |
|----|------------------|-------------------|
| A. | Increase | Increase |
| B. | Increase | Decrease |
| C. | Decrease | Increase |
| D. | Decrease | Decrease |

Correct Answer: D.....LOS: Reading 21-d

The present value of the physical capital required falls; this also reduces the financial capital required.

Reference: CFA® Program Curriculum, Volume 2, pp. 263-271.



3. It can be argued that monopolistic competition is efficient because:
- A. price exceeds marginal cost.
 - B. excess capacity is minimized.
 - C. marginal benefit equals marginal cost.
 - D. product variety offsets the difference between marginal revenue and marginal cost.
-

4. In a perfectly competitive market if prices fall below a firm's average total cost, the firm:
- A. should increase prices to marginal cost to reach breakeven.
 - B. could temporarily shutdown their operations to reduce losses.
 - C. should increase prices to average total cost to reach breakeven.
 - D. could temporarily shutdown their operations to eliminate losses.



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3. It can be argued that monopolistic competition is efficient because:
- A. price exceeds marginal cost.
 - B. excess capacity is minimized.
 - C. marginal benefit equals marginal cost.
 - D. product variety offsets the difference between marginal revenue and marginal cost.

Correct Answer: D..... **LOS: Reading 20-b**

Although in monopolistic competition price exceeds marginal cost, marginal benefit is not equal to marginal cost, and there is excess capacity produced. It can be argued that the variety of goods on offer compensates customers for these inefficiencies.

Reference: CFA® Program Curriculum, Volume 2, p. 210-215.

4. In a perfectly competitive market if prices fall below a firm's average total cost, the firm:
- A. should increase prices to marginal cost to reach breakeven.
 - B. could temporarily shutdown their operations to reduce losses.
 - C. should increase prices to average total cost to reach breakeven.
 - D. could temporarily shutdown their operations to eliminate losses.

Correct Answer: B..... **LOS: Reading 18-b**

Shutting down the operations temporarily will eliminate variable costs and losses will be limited to fixed costs. If the owners expect a rise in prices in the future this would be probably preferable to going out of business. Increasing prices is not an option since the firm is a price taker, if they increase prices sales would fall to zero.

Reference: CFA® Program Curriculum, Volume 2, pp. 151-159.



5. Which of the following statements is most accurate regarding the behavior of monopolists?
- A. Monopolists do not need to advertise since they are not facing competition.
 - B. Monopolists will expand output until marginal revenue equals marginal cost.
 - C. Monopolists can always make an economic profit since other firms cannot easily enter their markets.
 - D. Monopolists do not have any competition so they will charge the maximum possible price for their products.
-

6. Monopolies use price discrimination in order to:
- A. ensure that they earn zero economic profit.
 - B. reduce long-run average cost to the minimum level.
 - C. transfer the potential consumer surplus to economic profit.
 - D. reduce output to the level where marginal revenue equal marginal cost.



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5. Which of the following statements is most accurate regarding the behavior of monopolists?
- A. Monopolists do not need to advertise since they are not facing competition.
 - B. Monopolists will expand output until marginal revenue equals marginal cost.
 - C. Monopolists can always make an economic profit since other firms cannot easily enter their markets.
 - D. Monopolists do not have any competition so they will charge the maximum possible price for their products.

Correct Answer: B..... **LOS: Reading 19-b**

As is the case with other price searchers, monopolists will expand output until marginal revenue equals marginal cost. Monopolists still have a downward sloping demand curve and will need to attract demand (through advertising etc.) in order to make sales at a certain price level. Their concern is to achieve maximum profit rather than maximum price. Monopolists can lose money, as can any firm, if costs exceed revenue.

Reference: CFA® Program Curriculum, Volume 2, pp. 181-186.

6. Monopolies use price discrimination in order to:
- A. ensure that they earn zero economic profit.
 - B. reduce long-run average cost to the minimum level.
 - C. transfer the potential consumer surplus to economic profit.
 - D. reduce output to the level where marginal revenue equal marginal cost.

Correct Answer: C **LOS: Reading 19-c**

Price discrimination among buyers means aiming to charge different groups of customers the maximum price they are willing to pay. This will transfer the consumer surplus to the monopoly and increase its economic profit.

Reference: CFA® Program Curriculum, Volume 2, pp. 191-196.



7. Classical macroeconomists believe that:
- A. the economy is self regulating.
 - B. tax rates do not have a major impact on supply of labor.
 - C. money wage rates are very slow to adjust if there is a recession.
 - D. fiscal policy, rather than monetary policy, should be used to regulate the economy.
-
8. Advertising to promote a certain brand name:
- A. does not affect product pricing since consumers are under no obligation to buy goods that are heavily advertised.
 - B. is never of benefit to consumers since the cost of advertising will mean that consumers are overpaying for the product.
 - C. does not affect product pricing since producers must bear the cost of advertising and cannot pass the cost on to consumers.
 - D. can be beneficial to consumers since once a brand name has value the owners of the brand name will be careful to protect the reputation of their product.



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7. Classical macroeconomists believe that:

- A. the economy is self regulating.
- B. tax rates do not have a major impact on supply of labor.
- C. money wage rates are very slow to adjust if there is a recession.
- D. fiscal policy, rather than monetary policy, should be used to regulate the economy.

Correct Answer: A **LOS: Reading 23-d**

Classical economists believe that the economy is self regulating and taxes are a disincentive to work.

Reference: CFA® Program Curriculum, Volume 2, p. 335.

8. Advertising to promote a certain brand name:

- A. does not affect product pricing since consumers are under no obligation to buy goods that are heavily advertised.
- B. is never of benefit to consumers since the cost of advertising will mean that consumers are overpaying for the product.
- C. does not affect product pricing since producers must bear the cost of advertising and cannot pass the cost on to consumers.
- D. can be beneficial to consumers since once a brand name has value the owners of the brand name will be careful to protect the reputation of their product.

Correct Answer: D **LOS: Reading 20-c**

Advertising can provide consumers with information about the product so it does have some benefit to consumers, but the cost of advertising will often be passed on to consumers through higher prices. It is true, however, that consumers are under no obligation to pay higher prices since they have the option to buy a cheaper product that is not heavily advertised. Consumers will benefit in that a firm that has spent heavily to establish a brand name will be anxious to maintain the value of the brand name, and therefore provide an attractive product to the consumer.

Reference: CFA® Program Curriculum, Volume 2, pp. 436-437.



9. A firm which is operating in monopolistic competition will make:
- A. economic profits in the short and long run.
 - B. zero economic profit in the short run but economic profits in the long run.
 - C. either economic profits or losses in the short run and economic profits in the long run.
 - D. either economic profits or losses in the short run and zero economic profit in the long run.
-
10. Which of the following statements concerning the Consumer Price Index (CPI) is least accurate?
- A. Quality change bias will lead to the CPI overstating the true inflation rate.
 - B. Outlet substitution bias will lead to the CPI overstating the true inflation rate.
 - C. Social security payments which are linked to the CPI have risen more slowly than the true inflation rate.
 - D. Wage contracts that are linked to the CPI will tend to give workers a higher real income than intended.



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9. A firm which is operating in monopolistic competition will make:
- A. economic profits in the short and long run.
 - B. zero economic profit in the short run but economic profits in the long run.
 - C. either economic profits or losses in the short run and economic profits in the long run.
 - D. either economic profits or losses in the short run and zero economic profit in the long run.

Correct Answer: D.....**LOS: Reading 20-a**

Since monopolistic competition has low barriers to entry, if a firm is making economic profits new competitors will enter the market which will drive prices down. Similarly if firms are making economic losses it will lead to firms dropping out of the market and prices increasing until economic losses are eliminated. In both cases firms will make zero economic profit in the long run.

Reference: CFA® Program Curriculum, Volume 2, pp. 211-213.

10. Which of the following statements concerning the Consumer Price Index (CPI) is least accurate?
- A. Quality change bias will lead to the CPI overstating the true inflation rate.
 - B. Outlet substitution bias will lead to the CPI overstating the true inflation rate.
 - C. Social security payments which are linked to the CPI have risen more slowly than the true inflation rate.
 - D. Wage contracts that are linked to the CPI will tend to give workers a higher real income than intended.

Correct Answer: C.....**LOS: Reading 22-d**

Upward biases will be created by the quality change bias (goods more expensive but better quality, so the price rise is not all inflation effect) and outlet substitution bias (people use discount stores more if prices are rising). The CPI-based inflation number overstates true inflation so workers or social security recipients, with CPI-related contracts, benefit.

Reference: CFA® Program Curriculum, Volume 2, pp. 302-305.



11. Which of the following statements is the least accurate? The labor force participation rate:
- A. fluctuates in response to the business cycle.
 - B. rises when the number of discouraged workers is low.
 - C. reflects the number of people in the labor force that cannot find jobs.
 - D. reflects the likelihood that more people start to look for jobs during an expansion phase of a business cycle.
-

12. In an increasing-cost industry which is perfectly competitive the long-run market supply curve:
- A. is horizontal.
 - B. slopes upwards to the right.
 - C. slopes downwards to the right.
 - D. cannot be determined without more information.



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11. Which of the following statements is the least accurate? The labor force participation rate:

- A. fluctuates in response to the business cycle.
- B. rises when the number of discouraged workers is low.
- C. reflects the number of people in the labor force that cannot find jobs.
- D. reflects the likelihood that more people start to look for jobs during an expansion phase of a business cycle.

Correct Answer: C**LOS: Reading 22-a**

The number of people in the labor force that cannot find jobs refers to the unemployment rate. The labor force participation rate is the labor force divided by the working age population.

Reference: CFA® Program Curriculum, Volume 2, pp. 288-290.

12. In an increasing-cost industry which is perfectly competitive the long-run market supply curve:

- A. is horizontal.
- B. slopes upwards to the right.
- C. slopes downwards to the right.
- D. cannot be determined without more information.

Correct Answer: B.....**LOS: Reading 18-c**

In an increasing-cost industry the cost of production increases as output expands, usually since resource prices increase. Therefore market output will only increase as higher prices push the supply curve upwards to the right.

Reference: CFA® Program Curriculum, Volume 2, pp. 166-168.



13. A government decides to regulate a natural monopoly using marginal cost pricing where the price the monopoly can charge equals marginal cost. This will have the effect of:

- A. creating a shortage of supply.
 - B. maximizing the producer surplus.
 - C. consumers overpaying for the product.
 - D. ensuring the monopoly makes an economic loss.
-

14. A firm will maximize profits when:

- A. marginal product returns start to diminish.
- B. marginal product equals marginal revenue.
- C. marginal revenue product equals the wage rate.
- D. the marginal revenue product curve equals the demand curve.



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13. A government decides to regulate a natural monopoly using marginal cost pricing where the price the monopoly can charge equals marginal cost. This will have the effect of:

- A. creating a shortage of supply.
- B. maximizing the producer surplus.
- C. consumers overpaying for the product.
- D. ensuring the monopoly makes an economic loss.

Correct Answer: D.....**LOS: Reading 19-e**

A marginal cost pricing rule will mean, since the average total cost is above the marginal cost, that the monopoly makes an economic loss.

Reference: CFA® Program Curriculum, Volume 2, pp. 198-200.

14. A firm will maximize profits when:

- A. marginal product returns start to diminish.
- B. marginal product equals marginal revenue.
- C. marginal revenue product equals the wage rate.
- D. the marginal revenue product curve equals the demand curve.

Correct Answer: C.....**LOS: Reading 21-a**

Profit is maximized when marginal revenue product equals the wage rate, which is the equivalent to marginal revenue equals marginal cost. The marginal revenue product curve always equals the demand curve, not just at profit maximization.

Reference: CFA® Program Curriculum, Volume 2, pp. 253-258.



15. Which of the following is least likely to be a factor that creates entry barriers to an industry?

- A. Patent laws.
 - B. Economies of scale.
 - C. An inelastic demand curve.
 - D. Regulations that limit access to an industry.
-

16. Oligopolies are different to monopolistic competition markets because:

- A. oligopolists are price takers.
- B. there are high barriers to entry in an oligopoly but not in a monopolistic competition market.
- C. oligopolists are not competitive whereas monopolistic competition participants are competitive.
- D. oligopolists produce identical products whereas in monopolistic competition the products are differentiated.



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15. Which of the following is least likely to be a factor that creates entry barriers to an industry?

- A. Patent laws.
- B. Economies of scale.
- C. An inelastic demand curve.
- D. Regulations that limit access to an industry.

Correct Answer: C**LOS: Reading 19-a**

The important factors are economies of scale and government licensing, patents and copyrights.

Reference: CFA® Program Curriculum, Volume 2, pp. 176-180.

16. Oligopolies are different to monopolistic competition markets because:

- A. oligopolists are price takers.
- B. there are high barriers to entry in an oligopoly but not in a monopolistic competition market.
- C. oligopolists are not competitive whereas monopolistic competition participants are competitive.
- D. oligopolists produce identical products whereas in monopolistic competition the products are differentiated.

Correct Answer: B.....**LOS: Reading 20-a**

Products can be either identical or differentiated in an oligopoly. Oligopolists are price searchers and are often highly competitive.

Reference: CFA® Program Curriculum, Volume 2, pp. 220-222.



17. The supply of labor curve is backward bending because:
- A. the size of the adult population is increasing.
 - B. technological change has increased the supply of labor.
 - C. at high wage rates workers increase their demand for leisure.
 - D. at high wage rates the marginal benefit of working an extra hour diminishes so employees supply ever increasing levels of labor.
-
18. Which of the following might be considered as a problem in the calculation of unemployment?
- A. Part-time workers are counted as being unemployed.
 - B. Unemployed workers are not included in the labor force.
 - C. Unpaid household work is not considered to be employment.
 - D. A person seeking employment is not included in the labor force.



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17. The supply of labor curve is backward bending because:

- A. the size of the adult population is increasing.
- B. technological change has increased the supply of labor.
- C. at high wage rates workers increase their demand for leisure.
- D. at high wage rates the marginal benefit of working an extra hour diminishes so employees supply ever increasing levels of labor.

Correct Answer: C **LOS: Reading 21-b**

Initially as wage rates rise the quantity of labor supplied increases, but eventually at higher incomes workers value leisure more highly (the income effect) and the supply of labor starts to decline. Adult population changes and technological change will cause a shift in the supply curve.

Reference: CFA® Program Curriculum, Volume 2, pp. 260-261.

18. Which of the following might be considered as a problem in the calculation of unemployment?

- A. Part-time workers are counted as being unemployed.
- B. Unemployed workers are not included in the labor force.
- C. Unpaid household work is not considered to be employment.
- D. A person seeking employment is not included in the labor force.

Correct Answer: C **LOS: Reading 22-c**

Statements A, B, and D are not correct – part-time workers are counted as being employed, unemployed workers and a person seeking employment are included in the labor force. However housework is not considered to be employment.

Reference: CFA® Program Curriculum, Volume 2, pp. 293-296.



19. An oligopoly is characterized by:

- A. a large number of producers who are protected by high entry barriers.
 - B. a few large producers who are not competitive since they are protected by high entry barriers.
 - C. a competitive market between a few large producers who are protected by high entry barriers.
 - D. a small number of producers who carry out interdependent policies, there are no significant entry barriers to the market.
-

20. In monopolistic competition there are:

- A. low entry barriers and upward-sloping demand curves.
- B. high entry barriers and upward-sloping demand curves.
- C. low entry barriers and downward-sloping demand curves.
- D. high entry barriers and downward-sloping demand curves.



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19. An oligopoly is characterized by:

- A. a large number of producers who are protected by high entry barriers.
- B. a few large producers who are not competitive since they are protected by high entry barriers.
- C. a competitive market between a few large producers who are protected by high entry barriers.
- D. a small number of producers who carry out interdependent policies, there are no significant entry barriers to the market.

Correct Answer: C**LOS: Reading 20-a**

An oligopoly is characterized by:

- 1. High entry barriers.
- 2. A small number of firms.
- 3. Interdependence between the producers.

Reference: CFA® Program Curriculum, Volume 2, pp. 220-222.

20. In monopolistic competition there are:

- A. low entry barriers and upward-sloping demand curves.
- B. high entry barriers and upward-sloping demand curves.
- C. low entry barriers and downward-sloping demand curves.
- D. high entry barriers and downward-sloping demand curves.

Correct Answer: C**LOS: Reading 20-a**

In monopolistic competition firms produce differentiated goods. Therefore as their prices increase they will gradually lose customers, but not all their customers as in the case of price-taker markets, therefore demand curves are downward sloping. Monopolistic competition markets, as opposed to monopolies or oligopolies, have low entry barriers.

Reference: CFA® Program Curriculum, Volume 2, pp. 211-213.



21. Which of the following statements is least accurate regarding purely competitive markets?

- A. They are price-taker markets.
 - B. They are markets with no entry barriers.
 - C. Each firm's marginal revenue is less than price.
 - D. They are markets where there are a large number of small firms.
-

22. The supply of capital from individuals is least likely to increase when:

- A. incomes rise.
- B. interest rates rise.
- C. there is population growth.
- D. current income is low relative to future expected income.



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21. Which of the following statements is least accurate regarding purely competitive markets?

- A. They are price-taker markets.
- B. They are markets with no entry barriers.
- C. Each firm's marginal revenue is less than price.
- D. They are markets where there are a large number of small firms.

Correct Answer: C **LOS: Reading 18-a**

Purely competitive markets have no entry barriers and a large number of firms with a small market share and identical products. These are price-taker markets. Marginal revenue equals price.

Reference: CFA® Program Curriculum, Volume 2, pp. 150-154.

22. The supply of capital from individuals is least likely to increase when:

- A. incomes rise.
- B. interest rates rise.
- C. there is population growth.
- D. current income is low relative to future expected income.

Correct Answer: D **LOS: Reading 21-f**

When current income is low relative to future expected income people tend to spend more and save less. All the other factors tend to increase the quantity of capital.

Reference: CFA® Program Curriculum, Volume 2, pp. 269-272.



23. Which of the following statements is least accurate about a market which is made up of firms that are price takers?

- A. It is a purely competitive market.
 - B. The products of each firm are identical.
 - C. There are a large number of small firms in the market.
 - D. Firms have a downward sloping demand curve for their products.
-

24. In the short run a firm in perfect competition will expand production until marginal revenue is equal to:

- A. fixed cost.
- B. marginal cost.
- C. average total cost.
- D. marginal cost minus fixed cost.



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23. Which of the following statements is least accurate about a market which is made up of firms that are price takers?

- A. It is a purely competitive market.
- B. The products of each firm are identical.
- C. There are a large number of small firms in the market.
- D. Firms have a downward sloping demand curve for their products.

Correct Answer: D.....**LOS: Reading 18-a**

In a price-taker market there are a large number of firms producing small amounts of an identical product. Therefore if they increase the price of their product their sales will be zero. Firms with a downward sloping demand curve are operating in monopolistic competition.

Reference: CFA® Program Curriculum, Volume 2, pp. 150-152.

24. In the short run a firm in perfect competition will expand production until marginal revenue is equal to:

- A. fixed cost.
- B. marginal cost.
- C. average total cost.
- D. marginal cost minus fixed cost.

Correct Answer: B.....**LOS: Reading 18-b**

A firm will keep adding to production until the extra units produced add the same to revenue as to costs.

Reference: CFA® Program Curriculum, Volume 2, pp. 166-170.



25. Profit maximizing firms will expand production until marginal revenue equals marginal cost in:

- A. price-taker markets only.
 - B. monopolistic competition markets only.
 - C. price-taker and monopolistic competition markets.
 - D. neither price-taker nor monopolistic competition markets.
-

26. Which of the following statements regarding monopolistic competition and pure monopoly is least accurate?

- A. They are both protected by high entry barriers.
- B. Both markets have downward sloping demand curves.
- C. They are both looking to find the best price for their products to maximize profits.
- D. Both will expand production if marginal revenues are higher than marginal costs.



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25. Profit maximizing firms will expand production until marginal revenue equals marginal cost in:

- A. price-taker markets only.
- B. monopolistic competition markets only.
- C. price-taker and monopolistic competition markets.
- D. neither price-taker nor monopolistic competition markets.

Correct Answer: CLOS: Reading 18-a and 20-a

In both markets a firm can increase profit by expanding production if the marginal revenue is greater than the marginal cost.

Reference: CFA® Program Curriculum, Volume 2, pp. 150-153 and 211-214.

26. Which of the following statements regarding monopolistic competition and pure monopoly is least accurate?

- A. They are both protected by high entry barriers.
- B. Both markets have downward sloping demand curves.
- C. They are both looking to find the best price for their products to maximize profits.
- D. Both will expand production if marginal revenues are higher than marginal costs.

Correct Answer: ALOS: Reading 20-a

Monopolistic competition refers to a market which is characterized by low entry barriers.

Reference: CFA® Program Curriculum, Volume 2, pp. 198-213.



27. When the supply of a factor is perfectly elastic, owners of the factor find that the:

- | | Majority of income is: | Factor supply curve is: |
|----|------------------------|-------------------------|
| A. | Economic rent | Vertical |
| B. | Economic rent | Horizontal |
| C. | Opportunity cost | Vertical |
| D. | Opportunity cost | Horizontal |

28. In perfect competition, in the long run:

- A. firms will earn zero economic profits.
- B. firms will earn sufficient economic profit to attract new firms to enter the business.
- C. the minimum average total cost for the firms will be lower than the market price.
- D. the minimum average total cost for the firms will be higher than the market price.



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27. When the supply of a factor is perfectly elastic, owners of the factor find that the:

- | | Majority of income is: | Factor supply curve is: |
|----|------------------------|-------------------------|
| A. | Economic rent | Vertical |
| B. | Economic rent | Horizontal |
| C. | Opportunity cost | Vertical |
| D. | Opportunity cost | Horizontal |

Correct Answer: D..... **LOS: Reading 21-h**

Perfect elastic supply means that the curve is a horizontal line. An owner of the factor cannot earn any economic rent, the price they will receive for the factor is the 'going rate', there is abundant supply of the factor at this price.

Reference: CFA® Program Curriculum, Volume 2, pp. 274-277.



28. In perfect competition, in the long run:

- A. firms will earn zero economic profits.
- B. firms will earn sufficient economic profit to attract new firms to enter the business.
- C. the minimum average total cost for the firms will be lower than the market price.
- D. the minimum average total cost for the firms will be higher than the market price.

Correct Answer: A..... **LOS: Reading 18-c**

In a perfectly competitive market – if economic profits are available – it will attract new competition which will force market prices down. However, if market prices fall firms are making economic losses, then firms will drop out of the business allowing prices to rise. In either case economic profits will tend to zero in the long run.

Reference: CFA® Program Curriculum, Volume 2, pp. 160-164.



Study Session 06: Economics:

Monetary and Fiscal Economics

This study session focuses on the monetary sector of an economy. It examines the functions of money and how it is created, highlighting the special role of the central bank within an economy. Supply and demand for resources, such as labor and capital, and goods are strongly interrelated, and this study session describes circumstances when this may lead to inflation and the transmission mechanisms between the monetary sector and the real part of the economy. Finally, the goals and implications of fiscal and monetary policy are explored by examining some of the main models of macroeconomic theory (Keynesian, classical, and monetarist).

Reading 24: Money, Banks, and the Federal Reserve

Reading 25: Money, Interest, Real GDP, and the Price Level

Reading 26: Inflation

Reading 27: Fiscal Policy

Reading 28: Monetary Policy



1. If a government believes in using fiscal policies to stabilize the economy, when there are signs that the economy is in an inflationary economic boom, the government is most likely to consider:

- A. raising personal tax rates.
 - B. increasing defense spending.
 - C. borrowing to finance a larger budget deficit.
 - D. doing nothing and waiting for increasing resource costs and high interest rates to stabilize the economy.
-

2. The supply of money in the U.S. is dependent on:

- A. interest rates.
- B. the Federal Reserve's fiscal policy.
- C. the Federal Reserve's monetary policy.
- D. the net foreign investment into the country. 380.



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1. If a government believes in using fiscal policies to stabilize the economy, when there are signs that the economy is in an inflationary economic boom, the government is most likely to consider:
- A. raising personal tax rates.
 - B. increasing defense spending.
 - C. borrowing to finance a larger budget deficit.
 - D. doing nothing and waiting for increasing resource costs and high interest rates to stabilize the economy.

Correct Answer: A **LOS: Reading 27-d**

The government is likely to adopt a restrictive fiscal policy which would involve increasing taxes and/or reducing government expenditure.

Reference: CFA® Program Curriculum, Volume 2, pp. 449-450.

2. The supply of money in the U.S. is dependent on:
- A. interest rates.
 - B. the Federal Reserve's fiscal policy.
 - C. the Federal Reserve's monetary policy.
 - D. the net foreign investment into the country.

Correct Answer: C **LOS: Reading 25-b**

The role of a central bank, which is the Fed in the U.S., is to control money supply, through setting the reserve requirement, the discount rate and using open market operations.

Reference: CFA® Program Curriculum, Volume 2, p. 380.



3. In the U.S. which of the following is least likely to be a depository institution?
- A. A credit union.
 - B. A thrift institution.
 - C. Federal Reserve Bank.
 - D. A money market mutual fund.
-
4. Which of the following is an example of a new monetarist feedback rule?
- A. Set the discount rate at the ten-year average annual GDP growth rate less the four-year average annual growth in velocity of money.
 - B. Expand annual money supply at the ten-year average annual GDP growth rate less the four-year average annual growth in velocity of money.
 - C. Expand the monetary base at the target inflation rate adjusted for the long-term aggregate GDP growth rate and the growth rate in velocity of the monetary base.
 - D. Set the federal funds rate at the target inflation rate adjusted for the difference between the actual and target inflation rate and the difference between real GDP and potential GDP.



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3. In the U.S. which of the following is least likely to be a depository institution?
- A. A credit union.
 - B. A thrift institution.
 - C. Federal Reserve Bank.
 - D. A money market mutual fund.

Correct Answer: C **LOS: Reading 24-c**

A depository institution is a firm that takes deposits from individuals and firms and makes loans to other individuals and firms. There are three types of depository institution in the U.S. - commercial banks, thrift institutions and money market mutual funds. Credit unions are a type of thrift institution.

Reference: CFA® Program Curriculum, Volume 2, pp. 350-353.

4. Which of the following is an example of a new monetarist feedback rule?
- A. Set the discount rate at the ten-year average annual GDP growth rate less the four-year average annual growth in velocity of money.
 - B. Expand annual money supply at the ten-year average annual GDP growth rate less the four-year average annual growth in velocity of money.
 - C. Expand the monetary base at the target inflation rate adjusted for the long-term aggregate GDP growth rate and the growth rate in velocity of the monetary base.
 - D. Set the federal funds rate at the target inflation rate adjusted for the difference between the actual and target inflation rate and the difference between real GDP and potential GDP.

Correct Answer: C **LOS: Reading 28-e**

The McCallum rule is an example of a new monetarist rule, it says expand the monetary base at the same rate as the target inflation rate adjusted for trend GDP and the growth in velocity of the monetary base.

Reference: CFA® Program Curriculum, Volume 2, pp. 479-481.



5. Which of the following statements regarding income taxes is least accurate? A rise in income tax rates will reduce:

- A. the potential GDP.
 - B. the demand for labor.
 - C. equilibrium employment.
 - D. the quantity of labor available.
-

6. Which of the following statements is least accurate regarding the tax multiplier?

- A. When the marginal propensity to consume falls the multiplier rises.
- B. The multiplier is a key factor in using fiscal policy to stabilize an economy.
- C. The magnitude of the tax multiplier is less than the government purchases multiplier.
- D. The multiplier explains why small changes in tax rates can lead to large changes in aggregate demand.



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5. Which of the following statements regarding income taxes is least accurate? A rise in income tax rates will reduce:

- A. the potential GDP.
- B. the demand for labor.
- C. equilibrium employment.
- D. the quantity of labor available.

Correct Answer: B.....LOS: Reading 27-a

Income tax will not reduce the demand for labor directly but will reduce the supply of labor, reducing the full employment quantity of labor and potential GDP.

Reference: CFA® Program Curriculum, Volume 2, pp. 436-439.

6. Which of the following statements is least accurate regarding the tax multiplier?

- A. When the marginal propensity to consume falls the multiplier rises.
- B. The multiplier is a key factor in using fiscal policy to stabilize an economy.
- C. The magnitude of the tax multiplier is less than the government purchases multiplier.
- D. The multiplier explains why small changes in tax rates can lead to large changes in aggregate demand.

Correct Answer: A LOS: Reading 27-d

A is not correct – when the marginal propensity to consume falls people save more of the reduction in taxes, reducing the effect of the tax change.

Reference: CFA® Program Curriculum, Volume 2, pp. 449-450.



7. Demand-pull inflation is least likely to be accompanied by, in the short term:
- A. an increase in money wage rates.
 - B. a shift in the supply curve to the left.
 - C. real GDP falling below potential GDP.
 - D. unemployment falling below its natural rate.
-
8. The crowding-out effect refers to:
- A. financing high budget deficits pushes up interest rates which will reduce private investment.
 - B. individuals will spend more today if they think expenditure-related taxes will rise in the future.
 - C. the recognition by individuals that interest rates are going to rise if the government runs a budget deficit.
 - D. the recognition by individuals that they must save more today to pay for higher taxes in the future if the government runs a budget deficit.



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7. Demand-pull inflation is least likely to be accompanied by, in the short term:

- A. an increase in money wage rates.
- B. a shift in the supply curve to the left.
- C. real GDP falling below potential GDP.
- D. unemployment falling below its natural rate.

Correct Answer: C **LOS: Reading 26-b**

If the aggregate demand curve shifts to the right, without a move in the supply curve, then prices will rise. This will lead to:

- unemployment falling below its natural rate.
- money wage rates starting to rise.
- the supply curve shifting to the left.
- prices rising further.
- real GDP starting to decrease which will push real GDP above potential GDP.

Reference: CFA® Program Curriculum, Volume 2, p. 341.

8. The crowding-out effect refers to:

- A. financing high budget deficits pushes up interest rates which will reduce private investment.
- B. individuals will spend more today if they think expenditure-related taxes will rise in the future.
- C. the recognition by individuals that interest rates are going to rise if the government runs a budget deficit.
- D. the recognition by individuals that they must save more today to pay for higher taxes in the future if the government runs a budget deficit.

Correct Answer: A **LOS: Reading 27-b**

The crowding-out effect refers to when a government tries to stimulate an economy by borrowing to finance a budget deficit. This will increase interest rates, which will reduce companies' and individuals' expenditure, particularly on investment, which will reduce the effectiveness of the government's policy.

Reference: CFA® Program Curriculum, Volume 2, pp. 444-445.



9. Which of the following is least likely to act as an automatic stabilizer?

- A. Net exports.
- B. Induced taxes.
- C. Needs-tested spending.
- D. Progressive income tax.

10. An increase in income taxes will shift:

- A. the supply of labor curve to the left.
- B. the supply of labor curve to the right.
- C. the demand for labor curve to the left.
- D. the demand for labor curve to the right



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9. Which of the following is least likely to act as an automatic stabilizer?

- A. Net exports.
- B. Induced taxes.
- C. Needs-tested spending.
- D. Progressive income tax.

Correct Answer: A**LOS: Reading 27-e**

Automatic stabilizers stimulate demand during a recession and restrain demand during a boom without the government needing to change fiscal policy through legislation.

Reference: CFA® Program Curriculum, Volume 2, pp. 452-455.

10. An increase in income taxes will shift:

- A. the supply of labor curve to the left.
- B. the supply of labor curve to the right.
- C. the demand for labor curve to the left.
- D. the demand for labor curve to the right

Correct Answer: A**LOS: Reading 27-a**

The supply curve shifts to the left as after-tax wage rates decline. The demand for labor is not affected.

Reference: CFA® Program Curriculum, Volume 2, pp. 436-438.



11. If high rates of inflation resulting from an expansionary monetary policy are anticipated by decision makers then the unemployment rate and real GDP will:

- | | Unemployment | Real GDP |
|----|--------------|--------------|
| A. | fall | fall |
| B. | rise | fall |
| C. | be unchanged | rise |
| D. | be unchanged | be unchanged |

12. Which of the following would tend to increase the budget deficit during a recession?

- A. An automatic stabilizer.
- B. The crowding-out effect.
- C. A fall in the exchange rate.
- D. An increase in progressive taxation.



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11. If high rates of inflation resulting from an expansionary monetary policy are anticipated by decision makers then the unemployment rate and real GDP will:

	Unemployment	Real GDP
A.	fall	fall
B.	rise	fall
C.	be unchanged	rise
D.	be unchanged	be unchanged

Correct Answer: D..... **LOS: Reading 26-d**

Anticipated changes will only affect prices. Nominal GDP will rise but real GDP will be unchanged and unemployment unaffected.

Reference: CFA® Program Curriculum, Volume 2, pp. 410-411.

12. Which of the following would tend to increase the budget deficit during a recession?

- A. An automatic stabilizer.
- B. The crowding-out effect.
- C. A fall in the exchange rate.
- D. An increase in progressive taxation.

Correct Answer: A..... **LOS: Reading 27-e**

An automatic stabilizer reduces taxes and increases government spending.

Reference: CFA® Program Curriculum, Volume 2, pp. 452-455.



13. The first price rise in cost-push inflation is triggered by a jump in wage rates, and therefore the short-run aggregate:

- A. supply curve shifts to the left.
 - B. supply curve shifts to the right.
 - C. demand curve shifts to the left.
 - D. demand curve shifts to the right.
-

14. If there is an increase in inflation which is unanticipated then the impact on profits and employment is most likely to be:

- | | Profits | Employment |
|----|---------|-----------------------|
| A. | lower | below full employment |
| B. | lower | above full employment |
| C. | higher | below full employment |
| D. | higher | above full employment |



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13. The first price rise in cost-push inflation is triggered by a jump in wage rates, and therefore the short-run aggregate:

- A. supply curve shifts to the left.
- B. supply curve shifts to the right.
- C. demand curve shifts to the left.
- D. demand curve shifts to the right.

Correct Answer: A **LOS: Reading 26-b**

Cost-push inflation is triggered by a rise in the price of labor or another resource; the first impact will be a move in the aggregate supply curve to the left as aggregate supply decreases.

Reference: CFA® Program Curriculum, Volume 2, pp. 405-408.

14. If there is an increase in inflation which is unanticipated then the impact on profits and employment is most likely to be:

- | | Profits | Employment |
|----|---------|-----------------------|
| A. | lower | below full employment |
| B. | lower | above full employment |
| C. | higher | below full employment |
| D. | higher | above full employment |

Correct Answer: D **LOS: Reading 26-c**

The money wage rate will be too low which will increase profits. The real wage rate will fall so companies will try to hire more labor and increase production.

Reference: CFA® Program Curriculum, Volume 2, pp. 408-414.



15. The required reserve ratio is reduced to 15% giving a bank \$1 billion of excess reserves. In the long term this will lead to a potential expansion in the money supply of:

- A. \$0.15 billion.
- B. \$0.87 billion.
- C. \$6.67 billion.
- D. \$15.00 billion.

16. The major role of a central bank is to:

- A. implement fiscal policy.
- B. issue government securities.
- C. monitor the safety of banking institutions.
- D. maintain a favorable monetary environment.



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15. The required reserve ratio is reduced to 15% giving a bank \$1 billion of excess reserves. In the long term this will lead to a potential expansion in the money supply of:

- A. \$0.15 billion.
- B. \$0.87 billion.
- C. \$6.67 billion.
- D. \$15.00 billion.

Correct Answer: C LOS: Reading 24-d

The money supply will expand by the excess reserves multiplied by the reciprocal of the required reserve ratio, this is:

$\$1 \text{ billion} \times 1/0.15 = \6.67 billion.

Reference: CFA® Program Curriculum, Volume 2, pp. 356-359.

16. The major role of a central bank is to:

- A. implement fiscal policy.
- B. issue government securities.
- C. monitor the safety of banking institutions.
- D. maintain a favorable monetary environment.

Correct Answer: D LOS: Reading 24-e

Central banks are responsible for implementing monetary policy and thereby providing a favorable economic climate.

Reference: CFA® Program Curriculum, Volume 2, pp. 361-362.



17. The Laffer curve illustrates that:

- A. reducing tax rates will reduce output.
 - B. increasing tax rates increases the supply of labor.
 - C. increasing tax rates decreases the demand for labor.
 - D. increasing tax rates ultimately reduces tax revenue.
-

18. The short-term impact of a move by the Fed to reduce the quantity of money includes:

- A. an increase in real output.
- B. unchanged real interest rates.
- C. an increase in the inflation rate.
- D. an increase in short-term interest rates.



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17. The Laffer curve illustrates that:

- A. reducing tax rates will reduce output.
- B. increasing tax rates increases the supply of labor.
- C. increasing tax rates decreases the demand for labor.
- D. increasing tax rates ultimately reduces tax revenue.

Correct Answer: D.....**LOS: Reading 27-a**

The Laffer curve shows the relationship between tax rates (x-axis) and tax revenues (y-axis). The slope starts off being upward sloping, then peaks and sloped downwards, so D is correct, ultimately increasing tax rates decreases revenue as the quantity of employment falls.

Reference: CFA® Program Curriculum, Volume 2, pp. 439-440.

18. The short-term impact of a move by the Fed to reduce the quantity of money includes:

- A. an increase in real output.
- B. unchanged real interest rates.
- C. an increase in the inflation rate.
- D. an increase in short-term interest rates.

Correct Answer: D.....**LOS: Reading 25-b**

Both nominal and real interest rates will rise in the short term.

Reference: CFA® Program Curriculum, Volume 2, pp. 382-386.



19. In the U.S. commercial banks:

- A. must hold reserves equal to 100% of their loans.
 - B. must hold reserves equal to 100% of their deposits.
 - C. are permitted to hold reserves of less than 100% of their loans.
 - D. are permitted to hold reserves of less than 100% of their deposits..
-

20. An increase in the expected rate of inflation would lead to the following impact on the Phillips curves (PC):

- | | Short-run PC | Long-run PC |
|----|-----------------|--------------------|
| A. | no change | shift to the left |
| B. | no change | shift to the right |
| C. | shift upwards | no change |
| D. | shift downwards | no change |



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19. In the U.S. commercial banks:

- A. must hold reserves equal to 100% of their loans.
- B. must hold reserves equal to 100% of their deposits.
- C. are permitted to hold reserves of less than 100% of their loans.
- D. are permitted to hold reserves of less than 100% of their deposits.

Correct Answer: D..... **LOS: Reading 24-d**

A fractional reserve banking system means that banks only need to keep a fraction of their deposits as cash and other reserves. The rest are available to lend to customers.

Reference: CFA® Program Curriculum, Volume 2, p. 357.

20. An increase in the expected rate of inflation would lead to the following impact on the Phillips curves (PC):

- | | Short-run PC | Long-run PC |
|----|-----------------|--------------------|
| A. | no change | shift to the left |
| B. | no change | shift to the right |
| C. | shift upwards | no change |
| D. | shift downwards | no change |

Correct Answer: C **LOS: Reading 26-e**

A rise in expected inflation will shift the short-run Phillips curve upwards, the LRPC is unaffected and the point of intersection is the new expected rate.

Reference: CFA® Program Curriculum, Volume 2, pp. 410-419.



21. When the Fed purchases U.S. securities this will tend to:

	Monetary base	Money supply
A.	increase	increase
B.	increase	decrease
C.	decrease	increase
D.	decrease	decrease

22. The money multiplier is:

- A. the ratio of currency to deposits.
- B. the change in quantity of money for a change in the monetary base.
- C. the amount that a change in government expenditure increases real GDP.
- D. the average number of times a dollar of money is used annually to buy goods and services.



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21. When the Fed purchases U.S. securities this will tend to:

	Monetary base	Money supply
A.	increase	increase
B.	increase	decrease
C.	decrease	increase
D.	decrease	decrease

Correct Answer: A **LOS: Reading 24-e**

When the Fed purchases securities it adds to currency in circulation or deposits with banks thereby increasing the monetary base. This will lead to an increase in the money supply by a multiple decided by the actual money multiplier.

Reference: CFA® Program Curriculum, Volume 2, pp. 364-368.

22. The money multiplier is:

- A. the ratio of currency to deposits.
- B. the change in quantity of money for a change in the monetary base.
- C. the amount that a change in government expenditure increases real GDP.
- D. the average number of times a dollar of money is used annually to buy goods and services.

Correct Answer: B **LOS: Reading 24-f**

The definition of the money multiplier is the change in quantity of money for a change in the monetary base.

Answer: C is referring to the government purchases multiplier

Answer: D is the velocity of money.

Reference: CFA® Program Curriculum, Volume 2, pp. 367-368.



23. An unanticipated increase in money supply in the short term will lead to:

- A. an expansion in real output.
 - B. an increase in real interest rates.
 - C. little or no change in real economic activity.
 - D. a reduction in the profit margins of corporations.
-

24. A long period of rapid money supply growth will:

- A. increase inflation.
- B. expand real output.
- C. reduce unemployment.
- D. increase real interest rates.



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23. An unanticipated increase in money supply in the short term will lead to:

- A. an expansion in real output.
- B. an increase in real interest rates.
- C. little or no change in real economic activity.
- D. a reduction in the profit margins of corporations.

Correct Answer: A **LOS: Reading 25-c**

An unanticipated increase in money supply will reduce real interest rates and make it easier to borrow, thus increasing demand pushing up product price ahead of costs. This will improve corporate profitability and corporations will expand output.

Reference: CFA® Program Curriculum, Volume 2, pp. 382-384.

24. A long period of rapid money supply growth will:

- A. increase inflation.
- B. expand real output.
- C. reduce unemployment.
- D. increase real interest rates.

Correct Answer: A **LOS: Reading 25-c**

The first impact of rapid money supply growth will be to reduce real interest rates and stimulate aggregate demand. However, over time buyers and providers of resources will adjust prices upwards so real wages and profit margins will be unchanged, leaving real output unchanged. The only long-term effect will be higher prices and higher nominal interest rates (since inflation is higher).

Reference: CFA® Program Curriculum, Volume 2, pp. 386-390.



25. The quantity theory of money says that:
- A. if the quantity of money is increased then output and prices will also both increase.
 - B. if the quantity of money is increased then output will increase but prices will stay unchanged.
 - C. if the quantity of money is increased then the velocity of money will decrease, therefore output and prices are unchanged.
 - D. if the quantity of money is increased, velocity of money is constant and real output is independent of monetary factors, so prices increase.
-
26. The velocity of money is:
- A. the real GDP divided by the size of the money stock.
 - B. the multiple by which an increase in reserves will increase the money supply.
 - C. the increase in money supply divided by the value of bank deposits held by the Federal Reserve.
 - D. the average number of times that a dollar is used to purchase a final product or service during the year.



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25. The quantity theory of money says that:

- A. if the quantity of money is increased then output and prices will also both increase.
- B. if the quantity of money is increased then output will increase but prices will stay unchanged.
- C. if the quantity of money is increased then the velocity of money will decrease, therefore output and prices are unchanged.
- D. if the quantity of money is increased, velocity of money is constant and real output is independent of monetary factors, so prices increase.

Correct Answer: D.....**LOS: Reading 25-c**

The quantity theory of money says that GDP can be expressed as price x output or quantity of money x velocity. The theory says output and velocity are unaffected by changes in the quantity of money so an increase in the supply of money will cause a proportionate increase in the price level.

Reference: CFA® Program Curriculum, Volume 2, pp. 387-390.

26. The velocity of money is:

- A. the real GDP divided by the size of the money stock.
- B. the multiple by which an increase in reserves will increase the money supply.
- C. the increase in money supply divided by the value of bank deposits held by the Federal Reserve.
- D. the average number of times that a dollar is used to purchase a final product or service during the year.

Correct Answer: D.....**LOS: Reading 25-c**

The velocity of money is the nominal GDP divided by the money stock which is the average number of times that a dollar is used to purchase a final product or service during the year.

Reference: CFA® Program Curriculum, Volume 2, pp. 387-389.



27. The new Keynesian rule takes into account:

- A. current real GDP.
 - B. the velocity of money.
 - C. the monetary base growth rate.
 - D. the long-term real GDP growth rate.
-

28. If the inflation rate is overestimated by decision-makers then the short-term effect will be to:

- A. leave the unemployment rate unchanged.
- B. reduce the unemployment rate below its natural rate.
- C. increase the unemployment rate above its natural rate.
- D. keep the unemployment rate at the economy's natural rate of unemployment.



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27. The new Keynesian rule takes into account:

- A. current real GDP.
- B. the velocity of money.
- C. the monetary base growth rate.
- D. the long-term real GDP growth rate.

Correct Answer: A**LOS: Reading 28-e**

The new Keynesian model takes into account the difference between current GDP and potential GDP. The new monetarist rule takes into account the velocity of the monetary base, the monetary base growth rate and the long-term real GDP growth rate.

Reference: CFA® Program Curriculum, Volume 2, pp. 470-483.



28. If the inflation rate is overestimated by decision-makers then the short-term effect will be to:

- A. leave the unemployment rate unchanged.
- B. reduce the unemployment rate below its natural rate.
- C. increase the unemployment rate above its natural rate.
- D. keep the unemployment rate at the economy's natural rate of unemployment.

Correct Answer: C **LOS: Reading 26-c**

Employers will find that the real cost of labor is higher than they anticipated and will tend to employ fewer workers. Unemployed workers will also extend their search time as they see the wages available in real terms (when overestimating inflation) are not as good as they expect.

Reference: CFA® Program Curriculum, Volume 2, pp. 408-412.



Study Session 07: Financial Statement Analysis:

An Introduction

The readings in this study session discuss the general principles of the financial reporting system, underscoring the critical role of the analysis of financial reports in investment decision making.

The first reading introduces the range of information that an analyst may use in analyzing the financial performance of a company, including the principal financial statements (the income statement, balance sheet, cash flow statement, and statement of changes in owners' equity), notes to those statements, and management discussion and analysis of results. A general framework for addressing most financial statement analysis tasks is also presented.

A company's financial statements are the end-products of a process for recording the business transactions of the company. The second reading illustrates this process, introducing such basic concepts as the accounting equation and accounting accruals.

The presentation of financial information to the public by a company must conform to the governing set of financial reporting standards applying in the jurisdiction in which the information is released. The final reading in this study explores the role of financial reporting standard-setting bodies worldwide and the International Financial Reporting Standards framework promulgated by one key body, the International Accounting Standards Board. The movement towards worldwide convergence of financial reporting standards is also introduced.

Note: New rulings and/or pronouncements issued after the publication of the readings in Study Sessions 7 through 10 in financial statement analysis may cause some of the information in these readings to become dated. Candidates are expected to be familiar with the overall analytical framework contained in the study session readings, as well as the implications of alternative accounting methods for financial analysis and valuation, as provided in the assigned readings. For the purpose of Level I questions on financial statement analysis, when a ratio is defined and calculated differently in various texts, candidates should use the definitions given in the CFA Institute copyrighted readings by Robinson, et al. Variations in ratio definitions are part of the nature of practical financial analysis.

Reading 29: Financial Statement Analysis: An Introduction

Reading 30: Financial Reporting Mechanics

Reading 31: Financial Reporting Standards



1. The general ledger contains:
 - A. the same entries as the general journal, but in a different order.
 - B. a detailed description of each transaction arranged in date order.
 - C. the initial entries of transactions from which the general journal entries are derived.
 - D. the same entries as the general journal plus accruals and other adjustments made at the end of accounting periods.

2. If a manager is attempting to hide an expenditure for which he has paid cash he might record a fictitious:
 - A. pre-paid asset.
 - B. accrued expense.
 - C. accrued revenue.
 - D. pre-paid expense.



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1. The general ledger contains:

- A. the same entries as the general journal, but in a different order.
- B. a detailed description of each transaction arranged in date order.
- C. the initial entries of transactions from which the general journal entries are derived.
- D. the same entries as the general journal plus accruals and other adjustments made at the end of accounting periods.

Correct Answer: ALOS: Reading 30-g

The general ledger contains all the same entries as the general journal but they are stored by account, as opposed to by date in the general journal. The general journal, not the general ledger, is the first step in the accounting system flow.

Reference: CFA® Program Curriculum, Volume 3, pp. 68-69.

2. If a manager is attempting to hide an expenditure for which he has paid cash he might record a fictitious:

- A. pre-paid asset.
- B. accrued expense.
- C. accrued revenue.
- D. pre-paid expense.

Correct Answer: ALOS: Reading 30-h

To keep the accounts in balance the reduction in cash could be balanced by a pre-paid asset in the accounts. This would avoid recording an expense in the accounts.

Reference: CFA® Program Curriculum, Volume 3, pp. 71-72.



3. An increase in earnings per share on the income statement is least likely to be explained by the firm:

- A. reducing its interest costs.
- B. increasing the prices of units sold.
- C. increasing the number of units sold.
- D. increasing the number of shares outstanding.

4. A printing firm borrows \$500,000 from its bank and spends \$400,000 on inventory. It places \$80,000 on six-month deposit and retains \$20,000 in a checking account. The increase in current assets is:

- A. \$20,000
- B. \$80,000.
- C. \$100,000
- D. \$500,000.



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3. An increase in earnings per share on the income statement is least likely to be explained by the firm:

- A. reducing its interest costs.
- B. increasing the prices of units sold.
- C. increasing the number of units sold.
- D. increasing the number of shares outstanding.

Correct Answer: D..... **LOS: Reading 29-b**

Reducing interest costs, increasing revenue through price increases or increasing the number of units sold, will tend to increase profits and therefore earnings per share. Increasing the number of shares outstanding may reduce earnings per share unless the cash raised from the increase in shares is used to increase profits by a greater percentage.

Reference: CFA® Program Curriculum, Volume 3, pp. 13-15.

4. A printing firm borrows \$500,000 from its bank and spends \$400,000 on inventory. It places \$80,000 on six-month deposit and retains \$20,000 in a checking account. The increase in current assets is:

- A. \$20,000
- B. \$80,000.
- C. \$100,000
- D. \$500,000.

Correct Answer: D..... **LOS: Reading 30-d**

Current assets include cash, cash equivalents (which will become cash in a year or less) and inventory, so the current assets will increase by \$500,000.

Reference: CFA® Program Curriculum, Volume 3, pp. 46-65.



5. Which of the following statements regarding the cash flow statement is least accurate?
- A. The cash flow statement provides information on the sources and use of cash.
 - B. Firms are required to provide a reconciliation between cash flow and income statement items.
 - C. The total cash flow can be broken down into cash from operating, financing and investing activities.
 - D. The total cash flow in a year is equal to the change in cash and cash equivalents recorded in the beginning and end-year balance sheets.
-

6. The balance sheet is least likely to be used for information on a firm's:
- A. liquidity.
 - B. solvency.
 - C. profitability.
 - D. owners' equity.



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5. Which of the following statements regarding the cash flow statement is least accurate?
- A. The cash flow statement provides information on the sources and use of cash.
 - B. Firms are required to provide a reconciliation between cash flow and income statement items.
 - C. The total cash flow can be broken down into cash from operating, financing and investing activities.
 - D. The total cash flow in a year is equal to the change in cash and cash equivalents recorded in the beginning and end-year balance sheets.

Correct Answer: B..... **LOS: Reading 29-b**

An analyst can reconcile items on the cash flow statement against income statement and balance sheet items, but a firm is not required to provide the reconciliation.

Reference: CFA® Program Curriculum, Volume 3, pp. 17-19.

6. The balance sheet is least likely to be used for information on a firm's:
- A. liquidity.
 - B. solvency.
 - C. profitability.
 - D. owners' equity.

Correct Answer: C **LOS: Reading 29-b**

The balance sheet contains information on a firm's ability to meet its short-term and total obligations (liquidity and solvency respectively). It also reports the total value of assets and liabilities, the difference is owners' equity. Profitability is usually measured using the income statement.

Reference: CFA® Program Curriculum, Volume 3, pp. 15-17.



7. Which of the following is a requirement of presentation under International Financial Reporting Standards (IFRS)?

- A. Assets and liabilities for related items should be offset against each other.
 - B. Income and expenses for related items should be offset against each other.
 - C. Current and noncurrent assets should normally be combined unless an IFRS requires other wise.
 - D. The previous year's data should normally be provided for items in the financial statements.
-

8. Ahead of a major expansion program a firm raises an additional \$600 million from an issue of new common stock. It also raises \$500 million from the issue of long-term bonds. The profit made by the company in the same year was \$20 million and it paid out dividends of \$8 million. This will lead to an overall increase in stockholders' equity over the year of:

- A. \$612 million.
- B. \$620 million.
- C. \$1,100 million.
- D. \$1,112 million.



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7. Which of the following is a requirement of presentation under International Financial Reporting Standards (IFRS)?

- A. Assets and liabilities for related items should be offset against each other.
- B. Income and expenses for related items should be offset against each other.
- C. Current and noncurrent assets should normally be combined unless an IFRS requires other wise.
- D. The previous year's data should normally be provided for items in the financial statements.

Correct Answer: D..... **LOS: Reading 31-f**

Assets and liabilities, income and expenses cannot be offset against each other unless permitted or required by IFRS. Current and noncurrent assets should normally be separated. Comparative data should be provided for the previous year for items in the financial statements so D is correct.

Reference: CFA® Program Curriculum, Volume 3, pp. 115-116.

8. Ahead of a major expansion program a firm raises an additional \$600 million from an issue of new common stock. It also raises \$500 million from the issue of long-term bonds. The profit made by the company in the same year was \$20 million and it paid out dividends of \$8 million. This will lead to an overall increase in stockholders' equity over the year of:

- A. \$612 million.
- B. \$620 million.
- C. \$1,100 million.
- D. \$1,112 million.

Correct Answer: A..... **LOS: Reading 30-d**

Retained profits will increase by \$20 million, less dividends paid of \$8 million, which equals \$12 million. This, plus the increase in paid-up equity of \$600 million, will be the increase in stockholders' equity. The bond issue will increase liabilities but not stockholders' equity.

Reference: CFA® Program Curriculum, Volume 3, pp. 40-46.



9. A manufacturing company borrows short-term from a bank to purchase inventory, and also receives interest on a long-term bond investment. These are likely to be classified as which types of activity?

	Borrows from bank	Interest on bond
A.	Operating	Financing
B.	Operating	Investing
C.	Financing	Financing
D.	Financing	Investing

10. The International Accounting Standards Board (IASB) was established in order to

- A. harmonize accounting standards worldwide.
- B. review disclosure standards for publicly owned companies.
- C. provide an alternative set of accounting standards to U.S. GAAP.
- D. investigate regulatory issues with respect to accounting standards.



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9. A manufacturing company borrows short-term from a bank to purchase inventory, and also receives interest on a long-term bond investment. These are likely to be classified as which types of activity?

- | | Borrows from bank | Interest on bond |
|----|-------------------|------------------|
| A. | Operating | Financing |
| B. | Operating | Investing |
| C. | Financing | Financing |
| D. | Financing | Investing |

Correct Answer: B.....**LOS: Reading 30-a**

Short-term borrowing to finance operating activities would usually be classified as an operating activity. Interest received on a bond, where holding bond investments is not the main business of the company, would be classified as an investing activity.

Reference: CFA® Program Curriculum, Volume 3, pp. 36-37.

10. The International Accounting Standards Board (IASB) was established in order to

- A. harmonize accounting standards worldwide.
- B. review disclosure standards for publicly owned companies.
- C. provide an alternative set of accounting standards to U.S. GAAP.
- D. investigate regulatory issues with respect to accounting standards.

Correct Answer: A.....**LOS: Reading 31-b**

The IASB was set up to coordinate the accounting standards followed by companies worldwide.

Reference: CFA® Program Curriculum, Volume 3, p. 101.



11. Which of the following is most likely to be classified as a financing activity?

- A. Paying income tax.
- B. Repurchase of own stock.
- C. Giving credit to a customer.
- D. Receipt of dividends from an investment.

12. Under International Accounting Standards (IAS) which of the following is not required to be included in the financial statements:

- A. a cash flow statement.
- B. an internal audit report.
- C. notes of significant accounting policies.
- D. a statement of changes in stockholders' equity.



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11. Which of the following is most likely to be classified as a financing activity?

- A. Paying income tax.
- B. Repurchase of own stock.
- C. Giving credit to a customer.
- D. Receipt of dividends from an investment.

Correct Answer: B.....LOS: Reading 30-a

Financing activities relate to issuing or repaying capital, so repurchase of its own stock would be classified as a financing activity.

Reference: CFA® Program Curriculum, Volume 3, pp. 36-37.

12. Under International Accounting Standards (IAS) which of the following is not required to be included in the financial statements:

- A. a cash flow statement.
- B. an internal audit report.
- C. notes of significant accounting policies.
- D. a statement of changes in stockholders' equity.

Correct Answer: B.....LOS: Reading 31-d

The required information includes

- a balance sheet
- an income statement
- a statement of changes in equity
- a cash flow statement
- notes of significant accounting policies and other explanatory notes
- The report from the external, rather than internal, auditor would normally be included.

Reference: CFA® Program Curriculum, Volume 3, p. 114.



13. Which of the following is least likely to be identified as a main objective of the International Organization of Securities Commissions (IOSCO)?

- A. Protecting investors.
 - B. Reducing systematic risk.
 - C. Ensuring markets are fair, efficient and transparent.
 - D. Ensuring harmonization of accounting standards globally.
-

10-14. The following information is provided on a company

Retained earnings at end of year	\$1,450 million
Retained earnings at beginning of year	\$1,325 million
Contributed capital at end of year	\$1,250 million
Total assets at end of year	\$3,750 million
Dividends paid over year	\$ 75 million

Total liabilities at end of year are:

- A. \$975 million.
- B. \$1,050 million.
- C. \$1,175 million.
- D. \$6,450 million.



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13. Which of the following is least likely to be identified as a main objective of the International Organization of Securities Commissions (IOSCO)?

- A. Protecting investors.
- B. Reducing systematic risk.
- C. Ensuring markets are fair, efficient and transparent.
- D. Ensuring harmonization of accounting standards globally.

Correct Answer: D..... **LOS: Reading 31-b**

A, B and C describe the three core objectives of IOSCO, although IOSCO assists in achieving harmonization of accounting standards it is not a core objective.

Reference: CFA® Program Curriculum, Volume 3, pp. 101-102.

14. The following information is provided on a company

Retained earnings at end of year	\$1,450 million
Retained earnings at beginning of year	\$1,325 million
Contributed capital at end of year	\$1,250 million
Total assets at end of year	\$3,750 million
Dividends paid over year	\$ 75 million

Total liabilities at end of year are:

- A. \$975 million.
- B. \$1,050 million.
- C. \$1,175 million.
- D. \$6,450 million.

Correct Answer: B..... **LOS: Reading 30-c**

Liabilities = Assets – Owners' Equity
= \$3,750 million – (\$1,450 million + \$1,250 million) = \$1,050 million

Reference: CFA® Program Curriculum, Volume 3, pp. 40-43.



15. When a company has recognized revenue in the financial statements but has not billed the customer or received payment from the customer this gives rise to:

	Revenue	Asset/liability
A.	accrued revenue	asset
B.	accrued revenue	liability
C.	deferred revenue	asset
D.	deferred revenue	liability

16. When a company has incurred salary costs that have not been paid by the end of the accounting period this gives rise to:

	Expense	Asset/liability
A.	accrued expense	asset
B.	accrued expense	liability
C.	deferred expense	asset
D.	deferred expense	liability



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15. When a company has recognized revenue in the financial statements but has not billed the customer or received payment from the customer this gives rise to:

	Revenue	Asset/liability
A.	accrued revenue	asset
B.	accrued revenue	liability
C.	deferred revenue	asset
D.	deferred revenue	liability

Correct Answer: A **LOS: Reading 30-e**

When a company has recognized revenue in the financial statements but has not billed the customer or received cash this gives rise to unbilled or accrued revenue which is an asset.

Reference: CFA® Program Curriculum, Volume 3, pp. 65-68.

16. When a company has incurred salary costs that have not been paid by the end of the accounting period this gives rise to:

	Expense	Asset/liability
A.	accrued expense	asset
B.	accrued expense	liability
C.	deferred expense	asset
D.	deferred expense	liability

Correct Answer: B **LOS: Reading 30-e**

This is an example of an expense which has been incurred but not yet paid, this is an accrued expense and a liability since it must be paid in the future.

Reference: CFA® Program Curriculum, Volume 3, pp. 65-68.



17. Company ABC purchases 100,000 units of inventory at a total cost of \$500,000. It pays a deposit of 10% of the cost; the remainder of the cost will be paid in 20 days' time. As a result of this transaction assets will increase by:

- A. \$0.
 - B. \$ 50,000.
 - C. \$450,000.
 - D. \$500,000.
-

18. The method by which a company calculates depreciation is usually described in its:

- A. balance sheet.
- B. auditor's report.
- C. income statements.
- D. notes to the financial statements.



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17. Company ABC purchases 100,000 units of inventory at a total cost of \$500,000. It pays a deposit of 10% of the cost; the remainder of the cost will be paid in 20 days' time. As a result of this transaction assets will increase by:

- A. \$ 0.
- B. \$ 50,000.
- C. \$450,000.
- D. \$500,000.

Correct Answer: C **LOS: Reading 30-d**

The accounting entries will be an increase in inventory of \$500,00 and a reduction in cash of \$50,000, so a net increase in assets of \$450,000. Accounts payable, a liability, will increase by the same amount, \$450,000.

Reference: CFA® Program Curriculum, Volume 3, pp. 50-58.

18. The method by which a company calculates depreciation is usually described in its:

- A. balance sheet.
- B. auditor's report.
- C. income statements.
- D. notes to the financial statements.

Correct Answer: D **LOS: Reading 29-c**

A company's accounting policies, including how depreciation is calculated, would usually be included in the notes to the financial statements.

Reference: CFA® Program Curriculum, Volume 3, pp. 19-20.



19. A travel company records deferred revenue on its balance sheet. This might be explained by:

- A. customers are paying in cash for holidays before they travel.
 - B. customers are traveling before they have paid for their holidays.
 - C. customers are committing to purchase holidays before the revenue is recorded in the accounts.
 - D. the company is recording revenue before the customers have committed to purchase holidays through the company.
-

20. The basis of accounting that allocates cash flows to time periods which are different to when they occur is called:

- A. cash basis.
- B. accrual basis.
- C. matching basis.
- D. non-matching basis.



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19. A travel company records deferred revenue on its balance sheet. This might be explained by:

- A. customers are paying in cash for holidays before they travel.
- B. customers are traveling before they have paid for their holidays.
- C. customers are committing to purchase holidays before the revenue is recorded in the accounts.
- D. the company is recording revenue before the customers have committed to purchase holidays through the company.

Correct Answer: A **LOS: Reading 30-e**

Deferred revenue is unearned revenue, when companies receive cash before they earn the related revenue. This is a liability on the balance sheet.

Reference: CFA® Program Curriculum, Volume 3, pp. 65-68.

20. The basis of accounting that allocates cash flows to time periods which are different to when they occur is called:

- A. cash basis.
- B. accrual basis.
- C. matching basis.
- D. non-matching basis.

Correct Answer: B **LOS: Reading 30-e**

Under the cash basis a firm recognizes revenues when they are received and expenses when they are paid. Under the accrual basis it recognizes revenue when it provides substantially all of the services that it expects to perform and under the matching principle expenses are recognized in the same period as the related revenues.

Reference: CFA® Program Curriculum, Volume 3, pp. 65-68.



21. Equity valuation is usually part of which step in the financial analysis framework?

- A. Follow-up.
- B. Processing the data.
- C. Analysis of the processed data.
- D. Developing a recommendation.

22. The role of the International Accounting Standards Board (IASB) is most accurately described as:

- A. taking over responsibility for regulation of accounting practices in compliant countries.
- B. ensuring that differences between tax and financial statement accounting standards are minimized.
- C. ensuring that countries that adopt International Financial Reporting Standards (IFRS) comply with the standards.
- D. providing accounting standards which can form a solid base for harmonization of accounting practices.



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21. Equity valuation is usually part of which step in the financial analysis framework?

- A. Follow-up.
- B. Processing the data.
- C. Analysis of the processed data.
- D. Developing a recommendation.

Correct Answer: B..... LOS: Reading 29-f

Processing the data about a company includes computing ratios, and performing a valuation of a company's equity.

Reference: CFA® Program Curriculum, Volume 3, pp. 26-30.

22. The role of the International Accounting Standards Board (IASB) is most accurately described as:

- A. taking over responsibility for regulation of accounting practices in compliant countries.
- B. ensuring that differences between tax and financial statement accounting standards are minimized.
- C. ensuring that countries that adopt International Financial Reporting Standards (IFRS) comply with the standards.
- D. providing accounting standards which can form a solid base for harmonization of accounting practices.

Correct Answer: D..... LOS: Reading 31-b

The IASB is not a regulatory body but aims to establish a comprehensive, generally accepted basis of accounting that can be adopted across different countries as part of the harmonization process.

Reference: CFA® Program Curriculum, Volume 3, p. 101.



23. Owners' equity is least likely to be described as:

- A. total assets.
- B. net book value.
- C. shareholders' equity
- D. stockholders' equity.

24. A qualified accountant's report indicates that:

- A. the auditor is unwilling to express an opinion about the financial statements.
- B. the financial statements are not prepared completely in accordance with accounting standards.
- C. the financial statements are prepared in a manner which is materially out of line with accounting standards.
- D. the financial statements present a true and fair view of the company's performance and financial position.



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23. Owners' equity is least likely to be described as:

- A. total assets.
- B. net book value.
- C. shareholders' equity
- D. stockholders' equity.

Correct Answer: A **LOS: Reading 30-b**

Owners' equity is total assets less total liabilities, so A is not correct.

Reference: CFA® Program Curriculum, Volume 3, p. 41.

24. A qualified accountant's report indicates that:

- A. the auditor is unwilling to express an opinion about the financial statements.
- B. the financial statements are not prepared completely in accordance with accounting standards.
- C. the financial statements are prepared in a manner which is materially out of line with accounting standards.
- D. the financial statements present a true and fair view of the company's performance and financial position.

Correct Answer: B..... **LOS: Reading 29-d**

A qualified opinion indicates that there is some limitation or exception to accounting standards, details of which must be included in the audit report.

Reference: CFA® Program Curriculum, Volume 3, pp. 20-23.



25. Which of the following is least likely to be included as a liability on the balance sheet?

- A. provisions.
- B. trade payables.
- C. prepaid expenses.
- D. unearned revenue.

26. An auditor to a company is least likely to be responsible for which of the following?

- A. Preparing the financial statements.
- B. Examining a company's internal control systems.
- C. Confirming that the assets and liabilities are correctly stated.
- D. Ensuring the financial statements conform to generally accepted accounting principles.



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25. Which of the following is least likely to be included as a liability on the balance sheet?

- A. provisions.
- B. trade payables.
- C. prepaid expenses.
- D. unearned revenue.

Correct Answer: C **LOS: Reading 30-b**

Prepaid expenses are payments made in advance of when they are due, so they are an asset rather than a liability.

Reference: CFA® Program Curriculum, Volume 3, pp. 38-40.

26. An auditor to a company is least likely to be responsible for which of the following?

- A. Preparing the financial statements.
- B. Examining a company's internal control systems.
- C. Confirming that the assets and liabilities are correctly stated.
- D. Ensuring the financial statements conform to generally accepted accounting principles.

Correct Answer: A **LOS: Reading 29-d**

It is the company's responsibility to prepare the financial statements.

Reference: CFA® Program Curriculum, Volume 3, pp. 20-25.



27. Which of the following is least likely to be an obstacle to convergence in global financial reporting standards?

- A. Differing objectives between the IASB and FASB.
 - B. Political lobbying including pressure from listed companies.
 - C. Regulators have different views on accounting standards to standard-setting bodies.
 - D. There are many interested parties with divergent views on accounting standards..
-

28. The Management Discussion and Analysis in a stockholder report is least likely to include:

- A. the business outlook.
- B. discussion of cash flow trends.
- C. the background of the directors.
- D. results of operations and sales trends.



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27. Which of the following is least likely to be an obstacle to convergence in global financial reporting standards?

- A. Differing objectives between the IASB and FASB.
- B. Political lobbying including pressure from listed companies.
- C. Regulators have different views on accounting standards to standard-setting bodies.
- D. There are many interested parties with divergent views on accounting standards.

Correct Answer: A **LOS: Reading 31-c**

The IASB and FASB have agreed that they are both committed to achieving convergence in standards, and to maintaining compatibility once it is achieved.

Reference: CFA® Program Curriculum, Volume 3, p. 106.



28. The Management Discussion and Analysis in a stockholder report is least likely to include:

- A. the business outlook.
- B. discussion of cash flow trends.
- C. the background of the directors.
- D. results of operations and sales trends.

Correct Answer: C..... **LOS: Reading 29-c**

Publicly traded securities are required to provide Management Discussion and Analysis. Information about the directors would normally be included in a stockholder report but not in the Management Discussion and Analysis.

Reference: CFA® Program Curriculum, Volume 3, p. 20.



Study Session 08: Financial Statement Analysis: **The Income Statement, Balance Sheet, and Cash Flow Statement**

Each reading in this study session focuses on one of the three major financial statements: the balance sheet, the income statement, and the statement of cash flows. For each financial statement, the chapter details its purpose, construction, pertinent ratios, and common-size analysis. Understanding these concepts allows a financial analyst to evaluate trends in performance over several measurement periods and to compare the performance of different companies over the same period(s). Additional analyst tools such as the earnings per share calculation are also described.

Reading 32: Understanding the Income Statement

Reading 33: Understanding the Balance Sheet

Reading 34: Understanding the Cash Flow Statement



1. A firm decides to use the completed contract method as opposed to the percentage-of-completion method to account for a major construction project that it is working on. Until the contract is completed this will have the following impact on its financial statements:

- A. increase costs
 - B. increase revenues.
 - C. reduce cash flows.
 - D. reduce stockholders' equity.
-

2. A U.S. firm must reflect the effects of conversion of an outstanding convertible on earnings per share:

- A. in all cases.
- B. only if the management decides to do so.
- C. only if the conversion leads to dilution of earnings per share.
- D. only if the combined effect of conversion of all common stock equivalents outstanding leads to dilution of earnings per share.



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1. A firm decides to use the completed contract method as opposed to the percentage-of-completion method to account for a major construction project that it is working on. Until the contract is completed this will have the following impact on its financial statements:

- A. increase costs
- B. increase revenues.
- C. reduce cash flows.
- D. reduce stockholders' equity.

Correct Answer: D..... **LOS: Reading 32-b**

Under the completed contract method the firm recognizes revenues and expenses only at the end of the contract, which reduces stockholders' equity. The percentage-of-completion method recognizes revenues, costs and income in proportion to the percentage of work completed. Cash flow under both methods will be the same.

Reference: CFA® Program Curriculum, Volume 3, pp. 148-152.

2. A U.S. firm must reflect the effects of conversion of an outstanding convertible on earnings per share:

- A. in all cases.
- B. only if the management decides to do so.
- C. only if the conversion leads to dilution of earnings per share.
- D. only if the combined effect of conversion of all common stock equivalents outstanding leads to dilution of earnings per share.

Correct Answer: C..... **LOS: Reading 32-i**

Firms must recognize the potential effects of conversion on earnings per share and each outstanding common stock equivalent must be considered separately to see if it is dilutive or antidilutive.

Reference: CFA® Program Curriculum, Volume 3, pp. 174-180.



3. A common-size income statement:
- A. calculates all entries as a percentage of sales.
 - B. calculates all entries as a percentage of net income.
 - C. is an income statement that has been restated to use the same accounting principles as it has used in previous years.
 - D. is an income statement that complies with the same generally accepted accounting principles as those used by the company which it is being evaluated against.
-
4. Which of the following will lead to the largest increase in cash flow from operations?
- A. A decrease in accounts receivable and a decrease in inventories.
 - B. An increase in accounts receivable and a decrease in inventories.
 - C. A decrease in accounts receivable and an increase in inventories.
 - D. An increase in accounts receivable and an increase in inventories.



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3. A common-size income statement:

- A. calculates all entries as a percentage of sales.
- B. calculates all entries as a percentage of net income.
- C. is an income statement that has been restated to use the same accounting principles as it has used in previous years.
- D. is an income statement that complies with the same generally accepted accounting principles as those used by the company which it is being evaluated against.

Correct Answer: A **LOS: Reading 32-j**

Common-size statements normalize balance sheets, income statements and cash flow statements and are used to analyze trends within a company and also to compare different sized companies. Common-size income statements calculate all entries as a percentage of sales.

Reference: CFA® Program Curriculum, Volume 3, pp. 180-183.

4. Which of the following will lead to the largest increase in cash flow from operations?

- A. A decrease in accounts receivable and a decrease in inventories.
- B. An increase in accounts receivable and a decrease in inventories.
- C. A decrease in accounts receivable and an increase in inventories.
- D. An increase in accounts receivable and an increase in inventories.

Correct Answer: A **LOS: Reading 34-f**

A decrease in accounts receivable means that the amount owing from customers has declined, and a decrease in inventories means that additional inventory has been sold.

Reference: CFA® Program Curriculum, Volume 3, pp. 265-271.



5. An online travel company sells discounted hotel rooms to customers on behalf of major hotel chains. Once a sale has been completed the hotel chain bears the contractual obligation to provide the room described to the customer. The travel company reports the value of the rooms sold as revenue and the cost of purchasing accommodation from the hotels as a cost of goods sold. Under U.S. GAAP:

- A. net reporting is more appropriate since the hotel chains are primary obligors under the contracts.
 - B. gross reporting is preferred since it gives a better indication of the volume of business being conducted by the company.
 - C. net reporting should always be used when the pricing is being controlled by another party, in this case the hotel chains.
 - D. gross reporting is preferred since it will give a more conservative revenue number than if net reporting had been used.
-

6. Free cash flow to the firm is:

- A. cash flow from financing.
- B. cash flow from operations plus cash flow from investments.
- C. cash available to providers of a firm's capital after making all the required cash outlays.
- D. cash available to providers of a firm's capital after making all the required and discretionary cash outlays.



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5. An online travel company sells discounted hotel rooms to customers on behalf of major hotel chains. Once a sale has been completed the hotel chain bears the contractual obligation to provide the room described to the customer. The travel company reports the value of the rooms sold as revenue and the cost of purchasing accommodation from the hotels as a cost of goods sold. Under U.S. GAAP:

- A. net reporting is more appropriate since the hotel chains are primary obligors under the contracts.
- B. gross reporting is preferred since it gives a better indication of the volume of business being conducted by the company.
- C. net reporting should always be used when the pricing is being controlled by another party, in this case the hotel chains.
- D. gross reporting is preferred since it will give a more conservative revenue number than if net reporting had been used.

Correct Answer: A **LOS: Reading 32-b**

Under U.S. GAAP gross revenues should be reported by the travel company only after taking into consideration whether the travel company is the main obligor under the contract, bears inventory risk and credit risk, can choose supplier and price. In this case the company is acting as agent, it does not hold inventory and is not the main obligor under the contract so net reporting is appropriate.

Reference: CFA® Program Curriculum, Volume 3, pp. 154-156.

6. Free cash flow to the firm is:

- A. cash flow from financing.
- B. cash flow from operations plus cash flow from investments.
- C. cash available to providers of a firm's capital after making all the required cash outlays.
- D. cash available to providers of a firm's capital after making all the required and discretionary cash outlays.

Correct Answer: C **LOS: Reading 34-i**

Free cash flow is cash flow that is available for discretionary spending after making all the required cash outlays. Free cash flow to firm is available to pay all providers of capital.

Reference: CFA® Program Curriculum, Volume 3, pp. 287-288.



7. A company that is going through a rapid growth phase often has:
- A. positive operating cash flows as cash collections increase.
 - B. negative operating cash flows as inventories and receivables increase.
 - C. negative financing cash flows as it no longer require external financing.
 - D. negative operating cash flows since it has heavy capital expenditure commitments.
-
8. A company uses IAS GAAP for their cash flow classification for interest and dividend payments and receipts. Which of the following statements is most accurate?
- A. Total cash flows will be lower than if the company had used U.S. GAAP.
 - B. The company's cash flow from financing may be lower than if the company had used U.S. GAAP.
 - C. The company's cash flow from investing may be lower than if the company had used U.S. GAAP.
 - D. Cash flow from operations will always be the same whether the company uses IAS GAAP or U.S. GAAP.



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7. A company that is going through a rapid growth phase often has:
- A. positive operating cash flows as cash collections increase.
 - B. negative operating cash flows as inventories and receivables increase.
 - C. negative financing cash flows as it no longer require external financing.
 - D. negative operating cash flows since it has heavy capital expenditure commitments.

Correct Answer: B.....**LOS: Reading 34-a**

The major impact of heavy capital expenditure would be on investing cash flows, although the interest cost would affect operating cash flows. The major impact on operating cash flows is that as the business expands the money tied up in working capital rises. This is because inventory levels expand as sales increase and the receivables from clients are also likely to increase.

Reference: CFA® Program Curriculum, Volume 3, pp. 255-263.

8. A company uses IAS GAAP for their cash flow classification for interest and dividend payments and receipts. Which of the following statements is most accurate?
- A. Total cash flows will be lower than if the company had used U.S. GAAP.
 - B. The company's cash flow from financing may be lower than if the company had used U.S. GAAP.
 - C. The company's cash flow from investing may be lower than if the company had used U.S. GAAP.
 - D. Cash flow from operations will always be the same whether the company uses IAS GAAP or U.S. GAAP.

Correct Answer: B.....**LOS: Reading 34-c**

Interest and dividends paid may have been classified as cash flow from financing (CFF), thereby reducing CFF.

Interest and dividends received could have been classified as cash flow from investing so C is not correct.

Reference: CFA® Program Curriculum, Volume 3, pp. 254-255.



9. On January 1st 2007 a company had 15,000,000 of common stock and \$3,000,000 of 8% preferred stock outstanding. On October 1st the company issued and sold 5,000,000 new shares of common stock. The company did not have any common stock equivalents outstanding. If net income for the year was \$23,000,000, the company's basic earnings per share in 2007 were closest to:

- A. \$1.14.
- B. \$1.40.
- C. \$1.42.
- D. \$1.52.

10. The balance sheet is useful because it:

- A. reports all of the assets and liabilities of a firm.
- B. provides a report of the market value of the assets and liabilities of a firm.
- C. provides information to creditors on assets that are available as collateral for debt.
- D. is less influenced by the choice of accounting policies than the income statement or statement of cash flows.



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9. On January 1st 2007 a company had 15,000,000 of common stock and \$3,000,000 of 8% preferred stock outstanding. On October 1st the company issued and sold 5,000,000 new shares of common stock. The company did not have any common stock equivalents outstanding. If net income for the year was \$23,000,000, the company's basic earnings per share in 2007 were closest to:

- A. \$1.14.
- B. \$1.40.
- C. \$1.42.
- D. \$1.52.

Correct Answer: B..... **LOS: Reading 32-h**

$$\begin{aligned}\text{Earnings per share} &= \frac{\text{net income} - \text{preferred dividends}}{\text{weighted average number of shares outstanding}} \\ &= \frac{\$23,000,000 - \$240,000}{16,250,000} = \$1.40\end{aligned}$$

Reference: CFA® Program Curriculum, Volume 3, pp. 172-174.

10. The balance sheet is useful because it:

- A. reports all of the assets and liabilities of a firm.
- B. provides a report of the market value of the assets and liabilities of a firm.
- C. provides information to creditors on assets that are available as collateral for debt.
- D. is less influenced by the choice of accounting policies than the income statement or statement of cash flows.

Correct Answer: C **LOS: Reading 33-a**

A is not correct since, for example, brand names and customer lists, if internally generated, will not be included.

B is not correct since, for example, assets may be priced at cost or adjusted for depreciation and the value does not reflect market value.

D is not correct since the statement of cash flows is generally least affected by the choice of accounting policies.

Reference: CFA® Program Curriculum, Volume 3, pp. 196-201.



11. Which of the following is least likely to be a condition for recognizing revenue for the sale of a good according to the principles set out by the International Accounting Standards Board (IASB)?

- A. The buyer has paid for the goods.
 - B. The sale price has been agreed between the two parties.
 - C. The costs incurred as a result of the transaction are decided.
 - D. The buyer has taken on the risks associated with ownership of the good.
-

12. Under IFRS and U.S. GAAP when an acquirer has purchased another company giving rise to goodwill being recorded, should the goodwill then be amortized or tested for impairment?

- | | IFRS | U.S. GAAP |
|----|--------------|--------------|
| A. | impairment | impairment |
| B. | impairment | amortization |
| C. | amortization | impairment |
| D. | amortization | amortization |



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11. Which of the following is least likely to be a condition for recognizing revenue for the sale of a good according to the principles set out by the International Accounting Standards Board (IASB)?

- A. The buyer has paid for the goods.
- B. The sale price has been agreed between the two parties.
- C. The costs incurred as a result of the transaction are decided.
- D. The buyer has taken on the risks associated with ownership of the good.

Correct Answer: A **LOS: Reading 32-b**

Revenue is recognized when the following conditions are satisfied:
the seller has transferred to the buyer the significant risks and rewards of ownership
managerial involvement and effective control of the goods has been transferred
the revenue can be reliably measured
it is probable the economic proceeds of the transaction will pass to the seller
the costs associated with the transactions can be reliably estimated.
These can all occur independently of cash changing hands.

Reference: CFA® Program Curriculum, Volume 3, pp. 146-147.

12. Under IFRS and U.S. GAAP when an acquirer has purchased another company giving rise to goodwill being recorded, should the goodwill then be amortized or tested for impairment?

- | | IFRS | U.S. GAAP |
|----|--------------|--------------|
| A. | impairment | impairment |
| B. | impairment | amortization |
| C. | amortization | impairment |
| D. | amortization | amortization |

Correct Answer: A **LOS: Reading 33-e**

Under both IFRS and U.S. GAAP goodwill should be checked for impairment annually. If the goodwill number overstates its economic value (usually in terms of future cash flows generated) then it is impaired (recognized as a noncash expense). Amortization is no longer permitted.

Reference: CFA® Program Curriculum, Volume 3, pp. 221-223.



13. Which of the following is an example of a complex capital structure?
- A. The company has preferred shares outstanding.
 - B. The company has issued options to employees.
 - C. The company has performed a stock split in the current accounting period.
 - D. The company has performed a rights issue in the current accounting period.
-

14. When available-for-sale securities are held by a firm, an unrealized gain is:

	Income statement	Balance sheet
A.	recognized	recognized
B.	recognized	not recognized
C.	not recognized	recognized
D.	not recognized	not recognized



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13. Which of the following is an example of a complex capital structure?

- A. The company has preferred shares outstanding.
- B. The company has issued options to employees.
- C. The company has performed a stock split in the current accounting period.
- D. The company has performed a rights issue in the current accounting period.

Correct Answer: B..... **LOS: Reading 32-h**

A complex capital structure means that dilutive securities such as options, warrants or convertibles are outstanding.

Reference: CFA® Program Curriculum, Volume 3, pp. 171-172.

14. When available-for-sale securities are held by a firm, an unrealized gain is:

- | | Income statement | Balance sheet |
|----|------------------|----------------|
| A. | recognized | recognized |
| B. | recognized | not recognized |
| C. | not recognized | recognized |
| D. | not recognized | not recognized |

Correct Answer: C..... **LOS: Reading 38-c**

The unrealized gain is not recognized on the income statement, but is deferred as a valuation gain in stockholders' equity, reported in comprehensive income.

Reference: CFA® Program Curriculum, Volume 3, pp. 223-225.



15. Which of the following statements is least accurate regarding Treasury stock? The purchase of Treasury stock:

- A. reduces stockholders' equity.
 - B. reduces the total assets in the balance sheet.
 - C. is antidilutive, and leads to an increase in earnings per share.
 - D. reduces the cash paid out in dividends since there are fewer shares outstanding.
-

16. A company had 60,000 shares outstanding on January 1st and issues a 50% stock dividend on June 30th. The weighted average number of shares outstanding over the years ending December 31st is:

- A. 60,000.
- B. 75,000.
- C. 90,000.
- D. 120,000.



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15. Which of the following statements is least accurate regarding Treasury stock? The purchase of Treasury stock:

- A. reduces stockholders' equity.
- B. reduces the total assets in the balance sheet.
- C. is antidilutive, and leads to an increase in earnings per share.
- D. reduces the cash paid out in dividends since there are fewer shares outstanding.

Correct Answer: C **LOS: Reading 33-h**

When a company buys back its own stock it is referred to as Treasury stock. This will reduce cash and stockholders' equity as it is a reduction in the number of shares outstanding. Treasury stock does not receive dividends and is not included in the number of shares in an earnings per share calculation, so C is the best answer.

Reference: CFA® Program Curriculum, Volume 3, p. 226-230.

16. A company had 60,000 shares outstanding on January 1st and issues a 50% stock dividend on June 30th. The weighted average number of shares outstanding over the years ending December 31st is:

- A. 60,000.
- B. 75,000.
- C. 90,000.
- D. 120,000.

Correct Answer: C **LOS: Reading 32-h**

30,000 additional shares will be issued. Since the shares are given to existing shareholders and no cash is paid the shares outstanding are adjusted for the complete year.

Reference: CFA® Program Curriculum, Volume 3, pp. 172-174.



17. Using different revenue and expense recognition methods will:

- A. have no impact on the reported income statement.
 - B. have no impact on the reported operating cash flow.
 - C. have no impact on the assets and liabilities reported in the balance sheet.
 - D. lead to different income, assets and liabilities, and operating cash flow being reported.
-

18. If a firm's accounts receivable increase and accounts payable decrease then it will have a:

- A. positive impact on operating cash flow as customers owe a larger amount of money to the firm and the firm owes less money to suppliers than in the previous accounting period.
- B. positive impact on operating cash flow as customers owe a smaller amount of money to the firm and the firm owes more money to suppliers than in the previous accounting period.
- C. negative impact on operating cash flow as customers owe a larger amount of money to the firm and the firm owes less money to suppliers than in the previous accounting period.
- D. negative impact on operating cash flow as customers owe a smaller amount of money to the firm and the firm owes more money to suppliers than in the previous accounting period.



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17. Using different revenue and expense recognition methods will:

- A. have no impact on the reported income statement.
- B. have no impact on the reported operating cash flow.
- C. have no impact on the assets and liabilities reported in the balance sheet.
- D. lead to different income, assets and liabilities, and operating cash flow being reported.

Correct Answer: B.....**LOS: Reading 34-e**

The income statement and balance sheet will be different depending on which revenue recognition method is used. The advantage of looking at cash flow is that the cash flow is the same regardless of the method used (assuming tax treatment is the same).

Reference: CFA® Program Curriculum, Volume 3, pp. 279-283.

18. If a firm's accounts receivable increase and accounts payable decrease then it will have a:

- A. positive impact on operating cash flow as customers owe a larger amount of money to the firm and the firm owes less money to suppliers than in the previous accounting period.
- B. positive impact on operating cash flow as customers owe a smaller amount of money to the firm and the firm owes more money to suppliers than in the previous accounting period.
- C. negative impact on operating cash flow as customers owe a larger amount of money to the firm and the firm owes less money to suppliers than in the previous accounting period.
- D. negative impact on operating cash flow as customers owe a smaller amount of money to the firm and the firm owes more money to suppliers than in the previous accounting period.

Correct Answer: C.....**LOS: Reading 34-a**

When receivables increase it indicates that sales have been higher than cash collections, so more money is owed by customers. A decline in payables means that the firm has paid more in cash to suppliers than the value of goods received so it owes less money to suppliers. Both of these factors will lead to a smaller operating cash flow.

Reference: CFA® Program Curriculum, Volume 3, pp. 265-271.



19. The gross profit margin of a company has increased steadily, this could be explained by a:

- A. foreign exchange gain.
 - B. decline in interest expense as a percentage of sales.
 - C. decline in raw material costs as a percentage of sales.
 - D. decline in sales, general and administrative expense as a percentage of sales.
-

20. Which of the following would be least likely to be included in comprehensive income?

- A. Purchase of Treasury stock.
- B. Pension liability adjustment.
- C. Unrealized gains on securities.
- D. Foreign currency translation adjustment.



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19. The gross profit margin of a company has increased steadily, this could be explained by a:

- A. foreign exchange gain.
- B. decline in interest expense as a percentage of sales.
- C. decline in raw material costs as a percentage of sales.
- D. decline in sales, general and administrative expense as a percentage of sales.

Correct Answer: C **LOS: Reading 32-j**

Gross profit is sales minus cost of goods sold and therefore would not be affected by A, B and D.

Reference: CFA® Program Curriculum, Volume 3, pp. 184-185.

20. Which of the following would be least likely to be included in comprehensive income?

- A. Purchase of Treasury stock.
- B. Pension liability adjustment.
- C. Unrealized gains on securities.
- D. Foreign currency translation adjustment.

Correct Answer: A **LOS: Reading 33-h**

Comprehensive income is net income plus all other changes in stockholders' equity resulting from transactions with non-business owners. Therefore the purchase of Treasury stock would not be in comprehensive income, although it reduces stockholders' equity.

Reference: CFA® Program Curriculum, Volume 3, pp. 226-230.



21. If a company declares a total dividend of \$6 million and increases dividend payables by \$4 million in an accounting period, under U.S. GAAP, it will:

- A. increase the investing cash flow by \$4 million.
 - B. decrease the investing cash flow by \$6 million.
 - C. decrease the investing cash flow by \$2 million.
 - D. decrease the financing cash flow by \$2 million.
-

22. The treasury stock method for calculating diluted earnings per share assumes that:

- A. any dilutive securities held by the firm's treasury can be excluded from the diluted earnings per share calculation.
- B. any dilutive securities held by the firm's treasury must be included in the diluted earnings per share calculation.
- C. any convertible bonds outstanding are converted at the beginning of the period and the interest savings are added to the firm's interest income.
- D. any options and warrants outstanding are exercised at the beginning of the period and the proceeds used to purchase common stock for the firm's treasury.



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21. If a company declares a total dividend of \$6 million and increases dividend payables by \$4 million in an accounting period, under U.S. GAAP, it will:

- A. increase the investing cash flow by \$4 million.
- B. decrease the investing cash flow by \$6 million.
- C. decrease the investing cash flow by \$2 million.
- D. decrease the financing cash flow by \$2 million.

Correct Answer: D.....LOS: Reading 34-a

Payment of dividends is included in financing cash flows. The dividends paid out are \$6 million less \$4 million which equals \$2 million.

Reference: CFA® Program Curriculum, Volume 3, pp. 273-274.

22. The treasury stock method for calculating diluted earnings per share assumes that:

- A. any dilutive securities held by the firm's treasury can be excluded from the diluted earnings per share calculation.
- B. any dilutive securities held by the firm's treasury must be included in the diluted earnings per share calculation.
- C. any convertible bonds outstanding are converted at the beginning of the period and the interest savings are added to the firm's interest income.
- D. any options and warrants outstanding are exercised at the beginning of the period and the proceeds used to purchase common stock for the firm's treasury.

Correct Answer: D.....LOS: Reading 32-h

The treasury stock method is a way of calculating earnings per share using the hypothetical assumption that any options are exercised at the beginning of the period (or date of issue if later) and the company uses the proceeds to repurchase their own stock.

Reference: CFA® Program Curriculum, Volume 3, pp. 172-179.



23. A company has 2,000,000 common shares outstanding throughout the last year. Total dividends of \$1,000,000 were paid to common stockholders and dividends of \$400,000 were paid to preferred stockholders. Net income was \$6,000,000 and the tax rate was 40%. The company also had 100,000 options on common stock outstanding throughout the period; the exercise price is \$20.00. The average share price over the year was \$27.00 and the end year price was \$35.00. The diluted earnings per share was closest to:

- A. \$2.74.
- B. \$2.76.
- C. \$2.80.
- D. \$2.96.

24. Under U.S. accounting standards a brand name is:

- A. never reported in the balance sheet.
- B. always reported in the balance sheet.
- C. only reported in the balance sheet when it is internally created.
- D. only reported in the balance sheet when purchased from another party.



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23. A company has 2,000,000 common shares outstanding throughout the last year. Total dividends of \$1,000,000 were paid to common stockholders and dividends of \$400,000 were paid to preferred stockholders. Net income was \$6,000,000 and the tax rate was 40%. The company also had 100,000 options on common stock outstanding throughout the period; the exercise price is \$20.00. The average share price over the year was \$27.00 and the end year price was \$35.00. The diluted earnings per share was closest to:

- A. \$2.74.
- B. \$2.76.
- C. \$2.80.
- D. \$2.96.

Correct Answer: B..... **LOS: Reading 39-h**

Diluted earnings per share	=	$\frac{\text{net income} - \text{preferred dividends}}{\text{common shares} + \text{additional shares}}$
		$\frac{\$6,000,000 - \$400,000}{\$2,000,000 + \$100,000} = \frac{\$5,600,000}{\$2,025,926} = \$2.76 \text{ (versus basic \$2.80)}$

Denominator adjusts for buying back shares with option proceeds at average price for the year

=	$\frac{\$5,600,000}{\$2,025,926}$	=	\$2.76 (versus basic \$2.80)
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Reference: CFA® Program Curriculum, Volume 3, pp. 172-179.

24. Under U.S. accounting standards a brand name is:

- A. never reported in the balance sheet.
- B. always reported in the balance sheet.
- C. only reported in the balance sheet when it is internally created.
- D. only reported in the balance sheet when purchased from another party.

Correct Answer: D..... **LOS: Reading 33-e**

In the U.S. if a brand name is internally created it is not included in the balance sheet. When it is acquired from another company it is included in the assets in the balance sheet.

Reference: CFA® Program Curriculum, Volume 3, pp. 218-220.



25. If the interest payable decreased over an accounting period, under U.S. GAAP, it will:

- A. increase financing cash flow.
- B. increase operating cash flow.
- C. decrease financing cash flow.
- D. decrease operating cash flow.

26. A company reports a negative free cash flow to equity shareholders. This could be explained by:

- A. the company has raised funds by issuing new debt.
- B. interest rates have fallen reducing its cost of debt.
- C. the company has increased dividends payments to equity shareholders.
- D. the company has finished a major replacement project of their machinery.



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25. If the interest payable decreased over an accounting period, under U.S. GAAP, it will:

- A. increase financing cash flow.
- B. increase operating cash flow.
- C. decrease financing cash flow.
- D. decrease operating cash flow.

Correct Answer: D.....**LOS: Reading 34-a**

Interest expense is included in operating cash flows and if interest payable decreased it means that the cash paid out in interest was more than the interest expense accrued during the period.

Reference: CFA® Program Curriculum, Volume 3, pp. 265-271.

26. A company reports a negative free cash flow to equity shareholders. This could be explained by:

- A. the company has raised funds by issuing new debt.
- B. interest rates have fallen reducing its cost of debt.
- C. the company has increased dividends payments to equity shareholders.
- D. the company has finished a major replacement project of their machinery.

Correct Answer: D.....**LOS: Reading 34-i**

Free cash flow to equity is the cash generated by the company available for discretionary spending; this is often measured as operating cash flow less capital expenditure adjusted for payments to or from debt holders, so heavy expenditure on new machinery would reduce free cash flow. Increasing dividends would not affect free cash flow; they are part of cash flow from financing. Raising funds by issuing debt would increase free cash flow to equity. A reduction in the cost of debt would increase free cash to equity shareholders.

Reference: CFA® Program Curriculum, Volume 3, pp. 287-288.



27. A company had 500,000 common shares and \$2,500,000 of a 7% convertible bond issue outstanding throughout the last accounting period. The convertible bond is convertible into 6 shares per \$1,000. If the company's net income was \$5,500,000 and the tax rate was 30% the diluted earnings per share was closest to:

- A. \$10.68.
- B. \$10.92.
- C. \$11.00.
- D. \$11.25.

28. If a firm makes a provision for a write down of assets that are going to be sold as part of a restructuring of its operations, this would normally be classified under U.S. GAAP as:

- A. an extraordinary item.
- B. an unusual or infrequent item.
- C. a loss from discontinued operations.
- D. a profit from discontinued operations.



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27. A company had 500,000 common shares and \$2,500,000 of a 7% convertible bond issue outstanding throughout the last accounting period. The convertible bond is convertible into 6 shares per \$1,000. If the company's net income was \$5,500,000 and the tax rate was 30% the diluted earnings per share was closest to:

- A. \$10.68.
- B. \$10.92.
- C. \$11.00.
- D. \$11.25.

Correct Answer: B..... LOS: Reading 32-h

Diluted earnings per share:

$$\begin{aligned} &= \frac{\text{net income} + \text{net interest saving if convertible converted}}{\text{average common shares} + \text{additional shares from convertible}} \\ &= \frac{\$5,500,000 + \$122,500}{500,000 + 15,000} = \$10.92 \end{aligned}$$

= Basic EPS = \$11.00

Reference: CFA® Program Curriculum, Volume 3, pp. 174-177.



28. If a firm makes a provision for a write down of assets that are going to be sold as part of a restructuring of its operations, this would normally be classified under U.S. GAAP as:

- A. an extraordinary item.
- B. an unusual or infrequent item.
- C. a loss from discontinued operations.
- D. a profit from discontinued operations.

Correct Answer: B **LOS: Reading 32-g**

Restructuring costs are usually classed as nonrecurring items. Extraordinary items must be both unusual in nature and infrequent in occurrence.

Reference: CFA® Program Curriculum, Volume 3, p. 169.



Study Session 09: Financial Statement Analysis:

Inventories, Long-Term Assets, Deferred taxes, and On- and Off-Balance Sheet Debt

The readings in this study session examine specific categories of assets and liabilities that are particularly susceptible to the impact of alternative accounting policies and estimates. Analysts must understand the effects of alternative policies on financial statements and ratios, and be able to execute appropriate adjustments to enhance comparability between companies. In addition, analysts must be alert to differences between a company's reported financial statements and economic reality.

The description and measurement of inventories require careful attention because the investment in inventories is frequently the largest current asset for merchandizing and manufacturing companies. For these companies, the measurement of inventory cost (i.e., cost of goods sold) is a critical factor in determining gross profit and other measures of company profitability. Long-term operating assets are often the largest category of assets on a company's balance sheet. The analyst needs to scrutinize management's choices with respect to recognizing expenses associated with the operating assets because of the potentially large impact such choices can have on reported earnings.

A company's accounting policies (such as depreciation choices) can cause differences in taxes reported in financial statements and taxes reported on tax returns. The reading "Analysis of Income Taxes" discusses several issues that arise relating to deferred taxes.

Both on- and off-balance-sheet debt affect a company's liquidity and solvency, and have consequences for its long-term growth and viability. The notes of the financial statements must be carefully reviewed to ensure that all potential liabilities (e.g., leasing arrangements and other contractual commitments) are appropriately evaluated for their conformity to economic reality. Adjustments to the financial statements may be required to achieve comparability when evaluating several companies, and may also be required to improve credit and investment decision-making.

Reading 35: Analysis of Inventories

Reading 36: Analysis of Long-Lived Assets:

Part I—The Capitalization Decision

Reading 37: Analysis of Long-Lived Assets:

Part II—Analysis of Depreciation and Impairment

Reading 38: Analysis of Income Taxes

Reading 39: Analysis of Financing Liabilities

Reading 40: Leases and Off-Balance-Sheet Debt



1. If a firm decides to capitalize rather than expense the cost of assets this will mean:

	Return on assets	Long-term the return on assets
A.	less volatile	lower
B.	less volatile	higher
C.	more volatile	lower
D.	more volatile	higher.

-
2. If prices of a product held in inventory are falling the use of LIFO rather than FIFO for inventory accounting will lead to:

	Working capital	Net income
A.	lower	lower
B.	lower	higher
C.	higher	lower
D.	higher	higher



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1. If a firm decides to capitalize rather than expense the cost of assets this will mean:

	Return on assets	Long-term the return on assets
A.	less volatile	lower
B.	less volatile	higher
C.	more volatile	lower
D.	more volatile	higher.

Correct Answer: A **LOS: Reading 36-a**

Capitalization will lead to higher reported assets that will increase the denominator of return on assets so the return on assets will be lower. Earnings will be less volatile than if assets were expensed. Expensing would lead to larger fluctuations in earnings.

Reference: CFA® Program Curriculum, Volume 3, pp. 346-351.

2. If prices of a product held in inventory are falling the use of LIFO rather than FIFO for inventory accounting will lead to:

	Working capital	Net income
A.	lower	lower
B.	lower	higher
C.	higher	lower
D.	higher	higher

Correct Answer: D **LOS: Reading 35-c**

COGS will be lower under LIFO in a period of falling prices leading to higher net income and higher tax payments. Working capital will be higher since the higher inventory value will outweigh the lower cash balance due to higher tax payments.

Reference: CFA® Program Curriculum, Volume 3, pp. 308-311.



3. Which of the following statements is least accurate regarding accelerated depreciation methods?
- A. Accelerated depreciation compensates for the rising repair costs as an asset ages.
 - B. Accelerated depreciation methods depreciate an asset in proportion to its actual use.
 - C. Accelerated depreciation methods are sometimes used to reduce the tax burden immediately after an asset is purchased.
 - D. Accelerated depreciation methods are appropriate if the benefits from using an asset are highest when it is relatively new.
-
4. Impairment of an asset must be recognized in a firm's accounts when:
- A. there has been a decrease in the market value of the asset.
 - B. there has been an increase in the replacement cost of the asset.
 - C. the carrying value of the asset is higher than the expected future cash flows from the use of the asset plus its disposal value.
 - D. the carrying value of the asset is higher than the present value of expected future cash flows from the use of the asset plus its discounted disposal value.



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3. Which of the following statements is least accurate regarding accelerated depreciation methods?
- A. Accelerated depreciation compensates for the rising repair costs as an asset ages.
 - B. Accelerated depreciation methods depreciate an asset in proportion to its actual use.
 - C. Accelerated depreciation methods are sometimes used to reduce the tax burden immediately after an asset is purchased.
 - D. Accelerated depreciation methods are appropriate if the benefits from using an asset are highest when it is relatively new.

Correct Answer: B.....**LOS: Reading 37-a**

B is not correct since the units of production method depreciates assets in proportion to their use, and thus becomes a variable cost. Accelerated depreciation reduces the value of an asset by the largest amount in the early years regardless of when it is getting the most use.

Reference: CFA® Program Curriculum, Volume 3, pp. 382-388.

4. Impairment of an asset must be recognized in a firm's accounts when:
- A. there has been a decrease in the market value of the asset.
 - B. there has been an increase in the replacement cost of the asset.
 - C. the carrying value of the asset is higher than the expected future cash flows from the use of the asset plus its disposal value.
 - D. the carrying value of the asset is higher than the present value of expected future cash flows from the use of the asset plus its discounted disposal value.

Correct Answer: C.....**LOS: Reading 37-d**

A does not automatically lead to a write down if the value of the asset can be recovered through future cash flows.

B is not correct; replacement cost does not impact on the value of an asset in the balance sheet.

D is not correct; this is one of the calculations that can be done to work out the size of the loss on an impaired asset.

Reference: CFA® Program Curriculum, Volume 3, pp. 402-406.



5. If a company issues a zero-coupon bond an analyst should:

- A. reduce cash flow from investing.
- B. reduce cash flow from operations.
- C. increase cash flow from investing.
- D. increase cash flow from operations.

6. Which inventory accounting method usually gives a valuation of inventory that is closest to its economic value?

- A. FIFO.
- B. LIFO.
- C. Average cost method.
- D. Lower of cost or market.



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5. If a company issues a zero-coupon bond an analyst should:

- A. reduce cash flow from investing.
- B. reduce cash flow from operations.
- C. increase cash flow from investing.
- D. increase cash flow from operations.

Correct Answer: B.....**LOS: Reading 39-c**

Cash flow from operations is overstated since the full repayment of maturity value is treated as a financing cash flow whereas it represents interest repayments, which should be classified as an operating cash flow.

Reference: CFA® Program Curriculum, Volume 3, pp. 471-473.

6. Which inventory accounting method usually gives a valuation of inventory that is closest to its economic value?

- A. FIFO.
- B. LIFO.
- C. Average cost method.
- D. Lower of cost or market.

Correct Answer: A.....**LOS: Reading 35-a**

Since FIFO leaves the most recently purchased goods in inventory the valuation will usually be the closest to current values.

Reference: CFA® Program Curriculum, Volume 3, pp. 308-311.



7. Lessors usually prefer to classify leases as capital leases rather than operating leases because:

- A. they can report larger sales revenue immediately.
 - B. they can report a larger net cash flow immediately.
 - C. they will report constant income over the lease term.
 - D. over the term of the lease the total net income will be higher.
-

8. Which of the following statements concerning patents in the U.S. is most accurate?

- A. Patents have a legal life of 50 years.
- B. The value of a patent is constant throughout its life.
- C. The acquisition costs of buying patents from outside entities can be capitalized.
- D. Legal costs associated with developing patents internally must be expensed, other costs are capitalized.



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7. Lessors usually prefer to classify leases as capital leases rather than operating leases because:
- A. they can report larger sales revenue immediately.
 - B. they can report a larger net cash flow immediately.
 - C. they will report constant income over the lease term.
 - D. over the term of the lease the total net income will be higher.

Correct Answer: A **LOS: Reading 40-b**

Answer: B is not correct since operating cash flow is positive but investing cash low is negative by the same amount.

Answer: C is not correct, under an operating lease when the asset is depreciated using straight-line depreciation the income would be constant.

Answer: D is not correct since the total net income would be the same whichever method is used.

Reference: CFA® Program Curriculum, Volume 3, pp. 521-524.

8. Which of the following statements concerning patents in the U.S. is most accurate?
- A. Patents have a legal life of 50 years.
 - B. The value of a patent is constant throughout its life.
 - C. The acquisition costs of buying patents from outside entities can be capitalized.
 - D. Legal costs associated with developing patents internally must be expensed, other costs are capitalized.

Correct Answer: C **LOS: Reading 36-b**

Answer: A is not correct since patents have a legal life of 17 years; copyrights have a legal life of 50 years beyond the creator's life time.

Answer: B is not correct since patents can often become worthless if competition enters the market or the product becomes out of date.

Answer: D is not correct since costs for internally generated patents should be expensed except for the legal costs, which can be capitalized.

Reference: CFA® Program Curriculum, Volume 3, pp. 359-360.



9. A company included amortization of goodwill in its financial statements whereas amortization of goodwill is not recognized as an expense for tax purposes. This leads to the reporting of:

- A. a deferred tax asset.
 - B. a deferred tax liability.
 - C. neither a deferred tax asset nor a deferred tax liability.
 - D. prepaid tax on the income statement but no deferred tax asset on the balance sheet.
-

10. A company buys a piece of machinery for \$50,000 and it estimates the life of the machine to be four years after which it will have a salvage value of \$10,000. Using the double-declining-balance method of depreciation the depreciation charge in the third year will be:

- A. \$2,500.
- B. \$5,000.
- C. \$6,250.
- D. \$12,500.



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9. A company included amortization of goodwill in its financial statements whereas amortization of goodwill is not recognized as an expense for tax purposes. This leads to the reporting of:

- A. a deferred tax asset.
- B. a deferred tax liability.
- C. neither a deferred tax asset nor a deferred tax liability.
- D. prepaid tax on the income statement but no deferred tax asset on the balance sheet.

Correct Answer: CLOS: Reading 38-e

Permanent differences in tax treatment do not give rise to deferred tax items since they will not reverse in the future.

Reference: CFA® Program Curriculum, Volume 3, p. 445.

10. A company buys a piece of machinery for \$50,000 and it estimates the life of the machine to be four years after which it will have a salvage value of \$10,000. Using the double-declining-balance method of depreciation the depreciation charge in the third year will be:

- A. \$2,500.
- B. \$5,000.
- C. \$6,250.
- D. \$12,500.

Correct Answer: ALOS: Reading 37-a

Depreciation expense will be:

Year 1 $\frac{1}{2} \times (\$50,000)$ = \$25,000

Year 2 $\frac{1}{2} \times (\$50,000 - \$25,000)$ = \$12,500

Year 3 $\frac{1}{2} \times (\$50,000 - \$37,500)$ = \$6,250 but this is reduced to \$2,500 since the machinery has already reached its salvage value.

Reference: CFA® Program Curriculum, Volume 3, pp. 384-386.



11. If a firm decides to capitalize rather than expense the cost of assets this will lead to:

- A. lower cash flow from operations.
- B. higher cash flow from operations.
- C. no impact on cash flow from operations.
- D. higher or lower cash flow from operations depending on the level of expenditure on assets.

12. Which of the following costs related to the acquisition of a long-lived asset must be expensed in the U.S?

- A. Sales taxes.
- B. Installation costs.
- C. Freight and delivery costs.
- D. Related research and development costs.



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11. If a firm decides to capitalize rather than expense the cost of assets this will lead to:

- A. lower cash flow from operations.
- B. higher cash flow from operations.
- C. no impact on cash flow from operations.
- D. higher or lower cash flow from operations depending on the level of expenditure on assets.

Correct Answer: B.....LOS: Reading 36-a

Cash flow from operations will be higher since the cost will be recorded in the cash flow from investments.

Reference: CFA® Program Curriculum, Volume 3, p. 351.

12. Which of the following costs related to the acquisition of a long-lived asset must be expensed in the U.S?

- A. Sales taxes.
- B. Installation costs.
- C. Freight and delivery costs.
- D. Related research and development costs.

Correct Answer: D.....LOS: Reading 36-b

Research and development costs in the U.S. should be treated as an expense when they occur.

Reference: CFA® Program Curriculum, Volume 3, pp. 355-359.



13. A firm sells its product on account and allows customers to pay in installments over future time periods. In the financial reports it recognizes revenue at the time of sale but on a tax basis it recognizes revenues when it receives the cash. This will give rise to:

- A. a deferred tax asset.
 - B. a deferred tax liability.
 - C. neither a deferred tax asset nor a deferred tax liability.
 - D. it will depend on whether sales are increasing or decreasing whether it is a deferred tax asset or a deferred tax liability.
-

14. Lessees, when they are expanding companies, generally prefer to classify leases as operating rather than capital leases since it leads to all of the following except:

- A. higher reported assets.
- B. higher return on equity.
- C. lower reported leverage.
- D. later recognition of the lease expense.



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13. A firm sells its product on account and allows customers to pay in installments over future time periods. In the financial reports it recognizes revenue at the time of sale but on a tax basis it recognizes revenues when it receives the cash. This will give rise to:

- A. a deferred tax asset.
- B. a deferred tax liability.
- C. neither a deferred tax asset nor a deferred tax liability.
- D. it will depend on whether sales are increasing or decreasing whether it is a deferred tax asset or a deferred tax liability.

Correct Answer: B.....LOS: Reading 38-a

The firm's internal accounts will show a higher book value, due to accounts receivable, than that shown on a tax basis. A deferred tax liability will account for the difference. Whether the deferred tax liability gets larger or smaller over different periods will depend on whether sales are increasing or decreasing.

Reference: CFA® Program Curriculum, Volume 3, pp. 425-431.

14. Lessees, when they are expanding companies, generally prefer to classify leases as operating rather than capital leases since it leads to all of the following except:

- A. higher reported assets.
- B. higher return on equity.
- C. lower reported leverage.
- D. later recognition of the lease expense.

Correct Answer: A.....LOS: Reading 40-b

A is not correct; with an operating lease both reported assets and liabilities will be lower.

Reference: CFA® Program Curriculum, Volume 3, pp. 521-523.



15. Manufacturers Corporation provides the following data:

Machinery and equipment	2007
Gross investment	\$345 million
Accumulated depreciation	\$165 million
Depreciation expense	\$ 26 million (straight-line method)

The average age of the machinery is closest to:

- A. 2.1 years.
- B. 6.3 years.
- C. 6.9 years.
- D. 13.3 years.



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15. Manufacturers Corporation provides the following data:

Machinery and equipment	2007
Gross investment	\$345 million
Accumulated depreciation	\$165 million
Depreciation expense	\$ 26 million (straight-line method)

The average age of the machinery is closest to:

- A. 2.1 years.
- B. 6.3 years.
- C. 6.9 years.
- D. 13.3 years.

Correct Answer: B.....LOS: Reading 37-c

$$\text{average age} = \frac{\text{accumul. depreciation}}{\text{depreciat. expense}} = \frac{165}{26} = 6.3 \text{ years}$$

Reference: CFA® Program Curriculum, Volume 3, pp. 400-402.



25. Top Radios Inc. provided the following data regarding its radio purchases and sales over last year.

1 st January	Beginning inventory of 1,000 radios at cost of \$300 each
1 st March	Purchase of 1,000 radios at cost of \$320 each
1 st July	Purchase of 500 radios at cost of \$325 each
31 st December	Ending inventory of 1,200 radios

The reported value of inventory using LIFO and FIFO respectively at 31st December was:

	LIFO	FIFO
A.	\$364,000	\$375,600
B.	\$364,000	\$386,500
C.	\$375,600	\$386,500
D.	\$386,500	\$364,000



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16. Top Radios Inc. provided the following data regarding its radio purchases and sales over last year.

1 st January	Beginning inventory of 1,000 radios at cost of \$300 each
1 st March	Purchase of 1,000 radios at cost of \$320 each
1 st July	Purchase of 500 radios at cost of \$325 each
31 st December	Ending inventory of 1,200 radios

The reported value of inventory using LIFO and FIFO respectively at 31st December was:

	LIFO	FIFO
A.	\$364,000	\$375,600
B.	\$364,000	\$386,500
C.	\$375,600	\$386,500
D.	\$386,500	\$364,000

Correct Answer: B.....LOS: Reading 35-a

LIFO: ending inventory 1,200 radios, 1,000 @ \$300 and 200 @ \$320 = \$364,000

FIFO: ending inventory 1,200 radios, 500 @ \$325 and 700 @ \$320 = \$386,500

Reference: CFA® Program Curriculum, Volume 3, pp. 304-307.



17. A company decides to use the sum-of-years'-digits depreciation method to depreciate a piece of machinery that it is purchasing for \$35,000. It estimates that the machinery has a depreciable life of six years and a salvage value of \$8,000. The net book value of the machinery at the end of the third year is closest to:

- A. \$10,370.
- B. \$15,714.
- C. \$19,286.
- D. \$21,500.

18. A company decides to reduce the valuation allowance on a deferred tax asset resulting from tax loss carry forwards. This will:

- A. increase asset turnover.
- B. increase financial leverage.
- C. increase net profit margins.
- D. reduce stockholders' equity.



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17. A company decides to use the sum-of-years'-digits depreciation method to depreciate a piece of machinery that it is purchasing for \$35,000. It estimates that the machinery has a depreciable life of six years and a salvage value of \$8,000. The net book value of the machinery at the end of the third year is closest to:

- A. \$10,370.
- B. \$15,714.
- C. \$19,286.
- D. \$21,500.

Correct Answer: B.....LOS: Reading 37-a

Original cost minus salvage value = \$27,000

Sum-of-years' digits = 21

	Rate	Depreciation	Accumulation	Net book
Year 0				\$35,000
Year 1	6/21	\$7,714	\$7,714	\$27,286
Year 2	5/21	\$6,429	\$14,143	\$20,857
Year 3	4/21	\$5,143	\$19,286	\$15,714

Reference: CFA® Program Curriculum, Volume 3, pp. 384-386.

18. A company decides to reduce the valuation allowance on a deferred tax asset resulting from tax loss carry forwards. This will:

- A. increase asset turnover.
- B. increase financial leverage.
- C. increase net profit margins.
- D. reduce stockholders' equity.

Correct Answer: C.....LOS: Reading 38-c

Reducing the valuation allowance will increase income from continuing operations and increase the value of assets and stockholders' equity, thereby reducing leverage and asset turnover.

Reference: CFA® Program Curriculum, Volume 3, pp. 440-442.



19. In a period of rising prices and stable inventory quantities, cash flows will be:
- A. lower under LIFO than FIFO.
 - B. higher under LIFO than FIFO.
 - C. the same whether LIFO or FIFO is used.
 - D. higher or lower under LIFO than FIFO depending on inventory turnover.
-

20. A company is a producer of coffee and provides the following financial data:

\$ million	2006	2007
Inventories (year end)	185	205
COGS	1,560	1,750

The company uses FIFO for inventory accounting. Assuming that the major constituent of inventory is coffee, and coffee prices rose by 30% over the period, the COGS under LIFO in 2007 is approximately:

- A. \$1,770.0 million.
- B. \$1,805.5 million.
- C. \$1,811.5 million.
- D. \$1,935.0 million.



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19. In a period of rising prices and stable inventory quantities, cash flows will be:

- A. lower under LIFO than FIFO.
- B. higher under LIFO than FIFO.
- C. the same whether LIFO or FIFO is used.
- D. higher or lower under LIFO than FIFO depending on inventory turnover.

Correct Answer: B.....**LOS: Reading 35-c**

COGS will be higher under LIFO leading to lower pretax income and lower tax being paid. This will lead to higher cash flows.

Reference: CFA® Program Curriculum, Volume 3, pp. 308-311.

20. A company is a producer of coffee and provides the following financial data:

\$ million	2006	2007
Inventories (year end)	185	205
COGS	1,560	1,750

The company uses FIFO for inventory accounting. Assuming that the major constituent of inventory is coffee, and coffee prices rose by 30% over the period, the COGS under LIFO in 2007 is approximately:

- A. \$1,770.0 million.
- B. \$1,805.5 million.
- C. \$1,811.5 million.
- D. \$1,935.0 million.

Correct Answer: B.....**LOS: Reading 35-c**

COGS under LIFO

= COGS under FIFO + (Beginning Inventory under FIFO x r)

where r is the inflation rate for the goods being produced.

= 1750 + (185 x 0.30)

= 1805.5

Reference: CFA® Program Curriculum, Volume 3, pp. 312-315.



21. A company constructs a new factory and finances the factory partly from borrowings and partly using retained earnings. In line with U.S. accounting rules, during the construction period the firm should:

- A. expense the interest costs associated with the borrowing.
 - B. only capitalize the interest costs associated with the borrowing.
 - C. capitalize the interest costs associated with the borrowing and the cost of the equity used.
 - D. expense or capitalize the costs associated with financing the factory depending on the company's internal policy.
-

22. Bond covenants are used to

- A. protect investors in the bond.
- B. protect the firm from early redemption of the bonds.
- C. clarify the relationship between bond holder and the bond issuer.
- D. protect equity investors from bond holders exercising a claim on a firm's assets.



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21. A company constructs a new factory and finances the factory partly from borrowings and partly using retained earnings. In line with U.S. accounting rules, during the construction period the firm should:

- A. expense the interest costs associated with the borrowing.
- B. only capitalize the interest costs associated with the borrowing.
- C. capitalize the interest costs associated with the borrowing and the cost of the equity used.
- D. expense or capitalize the costs associated with financing the factory depending on the company's internal policy.

Correct Answer: B.....**LOS: Reading 36-a**

Although somewhat inconsistent, only interest costs are capitalized.

Reference: CFA® Program Curriculum, Volume 3, pp. 351-354.

22. Bond covenants are used to

- A. protect investors in the bond.
- B. protect the firm from early redemption of the bonds.
- C. clarify the relationship between bond holder and the bond issuer.
- D. protect equity investors from bond holders exercising a claim on a firm's assets.

Correct Answer: A.....**LOS: Reading 39-h**

Covenants are to protect creditors', in this case the bond holders', interests by limiting the debtor's activities if it could weaken the creditors' position.

Reference: CFA® Program Curriculum, Volume 3, pp. 500-502.



23. Internationally the treatment of research and development costs is:
- A. both research and development costs are normally expensed.
 - B. both research and development costs are normally capitalized.
 - C. research costs can be capitalized and development costs are normally expensed.
 - D. research costs are normally expensed and development costs can be capitalized.
-
24. When a bond issuer makes a coupon payment for a bond that was issued at a premium it will be reported in the company's financial statements as a:
- A. cash flow from investing.
 - B. cash flow from financing.
 - C. cash flow from operations.
 - D. partly as a cash flow from operations and partly as a cash flow from financing.



23. Internationally the treatment of research and development costs is:

- A. both research and development costs are normally expensed.
- B. both research and development costs are normally capitalized.
- C. research costs can be capitalized and development costs are normally expensed.
- D. research costs are normally expensed and development costs can be capitalized.

Correct Answer: D..... **LOS: Reading 36-b**

Research costs are usually expensed but development costs can be capitalized if certain criteria are met, so D is the best answer.

Reference: CFA® Program Curriculum, Volume 3, pp. 354-358.

24. When a bond issuer makes a coupon payment for a bond that was issued at a premium it will be reported in the company's financial statements as a:

- A. cash flow from investing.
- B. cash flow from financing.
- C. cash flow from operations.
- D. partly as a cash flow from operations and partly as a cash flow from financing.

Correct Answer: C..... **LOS: Reading 39-b**

The coupon payment will be counted as a cash flow from operations although it can be argued that the interest component should be seen as a cash flow from operations and the reduction in principal as cash flow from financing.

Reference: CFA® Program Curriculum, Volume 3, pp. 466-471.



25. The Cost of Goods Sold for Top Radios Inc. was (see financial data in question no. 25):

- A. higher under FIFO than using LIFO.
 - B. higher under FIFO than using the weighted average cost method.
 - C. higher using the weighted average cost method than under LIFO.
 - D. higher under LIFO than using the weighted average cost method.
-

26. A company has just bought a machine and wants to maximize the depreciation expense in the first year; they would consider:

- A. understating the cost.
- B. using an accelerated depreciation method.
- C. overestimating the useful life of the machine.
- D. overestimating the salvage value of the machine.



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25. The Cost of Goods Sold for Top Radios Inc. was (see financial data in question no. 25):

- A. higher under FIFO than using LIFO.
- B. higher under FIFO than using the weighted average cost method.
- C. higher using the weighted average cost method than under LIFO.
- D. higher under LIFO than using the weighted average cost method.

Correct Answer: D.....**LOS: Reading 35-a**

LIFO: COGS 1,300 radios, 500 @ \$ 325 and 800 @ \$320 = \$418,500

FIFO: COGS 1,300 radios, 1,000 @ \$300 and 300 @ \$320 = \$396,000

Weighted average: cost of goods available was \$782,500/2,500 = \$313,000

COGS = 1,300 radios @ \$313 = \$406,900

Therefore D is correct.

Reference: CFA® Program Curriculum, Volume 3, pp. 304-307.

26. A company has just bought a machine and wants to maximize the depreciation expense in the first year; they would consider:

- A. understating the cost.
- B. using an accelerated depreciation method.
- C. overestimating the useful life of the machine.
- D. overestimating the salvage value of the machine.

Correct Answer: B.....**LOS: Reading 37-b**

Overestimating the salvage value or life of the machine would reduce the depreciation charges.

Reference: CFA® Program Curriculum, Volume 3, pp. 394-397.



27. If a company uses straight-line methods to depreciate assets, then classifying a lease as an operating lease rather than a capital lease will lead to:

- A. lower operating income throughout the lease period.
- B. higher operating income throughout the lease period.
- C. higher operating income at the beginning of the lease period and then lower operating income.
- D. lower operating income at the beginning of the lease period and then higher operating income.

28. If a company makes write downs due to impairments of long-lived assets this will:

- | | Net deferred tax liabilities | Debt to equity ratio |
|----|------------------------------|----------------------|
| A. | increase | increase |
| B. | increase | decrease |
| C. | decrease | increase |
| D. | decrease | decrease |



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27. If a company uses straight-line methods to depreciate assets, then classifying a lease as an operating lease rather than a capital lease will lead to:

- A. lower operating income throughout the lease period.
- B. higher operating income throughout the lease period.
- C. higher operating income at the beginning of the lease period and then lower operating income.
- D. lower operating income at the beginning of the lease period and then higher operating income.

Correct Answer: A **LOS: Reading 40-a**

Using an operating lease will lead to higher operating costs since the lease payment will always be higher than the depreciation cost (remember interest costs will appear after the operating income level).

Reference: CFA® Program Curriculum, Volume 3, pp. 521-524.



28. If a company makes write downs due to impairments of long-lived assets this will:

- | | Net deferred tax liabilities | Debt to equity ratio |
|----|------------------------------|----------------------|
| A. | increase | increase |
| B. | increase | decrease |
| C. | decrease | increase |
| D. | decrease | decrease |

Correct Answer: C **LOS: Reading 37-d**

Impairment losses are not recognized for tax purposes until the asset is disposed of and therefore net deferred tax liabilities will be reduced. Impairment write-downs will lead to reduction in asset values and equity values and therefore an increase in the debt to equity ratio.

Reference: CFA® Program Curriculum, Volume 3, pp. 384-386.



Study Session 10: Financial Statement analysis: Techniques, Applications, and International Standards Convergence

The readings in this study session discuss financial analysis techniques, financial statement analysis applications, and the international convergence of accounting standards.

The first reading presents the most frequently used tools and techniques used to evaluate companies, including common size analysis, cross-sectional analysis, trend analysis, and ratio analysis. The second reading then shows the application of financial analysis techniques to major analyst tasks including the evaluation of past and future financial performance, credit risk, and the screening of potential equity investments. The reading also discusses analyst adjustments to reported financials. Such adjustments are often needed to put companies' reported results on a comparable basis.

This study session concludes with a reading on convergence of international and U.S. accounting standards. Although there has been much progress in harmonizing accounting standards globally, as this reading discusses, there are still significant variations between generally accepted accounting principles from one country to another.

Reading 41: Financial Analysis Techniques

Reading 42: Financial Statement Analysis: Applications

Reading 43: International Standards Convergence



1. Which of the following ratios would be most useful in evaluating a company's internal liquidity?
 - A. Asset turnover.
 - B. Interest coverage.
 - C. Debt-to-equity ratio.
 - D. Defensive interval ratio.
-

2. A retail analyst follows a top-down approach to projecting a retail company's sales. The first step in his analysis is most likely to be to consider the impact of which of the following?
 - A. The company's competitive strategy.
 - B. The projected rise in consumer spending.
 - C. The competitive factors in the retail sector.
 - D. The sensitivity of the company's sales to economic growth.



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1. Which of the following ratios would be most useful in evaluating a company's internal liquidity?
- A. Asset turnover.
 - B. Interest coverage.
 - C. Debt-to-equity ratio.
 - D. Defensive interval ratio.

Correct Answer: D.....LOS: Reading 41-e

The defensive interval ratio measures how long a company can pay its daily expenditures using its existing liquid assets (cash + short-term marketable securities + receivables). This is a measure of a company's liquidity. Interest coverage and debt-to-equity ratios measure solvency and asset turnover measures activity.

Reference: CFA® Program Curriculum, Volume 3, pp. 590-591.

2. A retail analyst follows a top-down approach to projecting a retail company's sales. The first step in his analysis is most likely to be to consider the impact of which of the following?
- A. The company's competitive strategy.
 - B. The projected rise in consumer spending.
 - C. The competitive factors in the retail sector.
 - D. The sensitivity of the company's sales to economic growth.

Correct Answer: B.....LOS: Reading 42-b

The first step in a top-down approach is to assess the economic environment and other macro factors. The impact of these is then considered on the industry and finally the analyst moves down to company analysis. Therefore B is the best answer.

Reference: CFA® Program Curriculum, Volume 3, pp. 639-641.



3. Common-size statements are least likely to be used for cross-sectional analysis because they allow analysts:

- A. to identify trends in a company's performance.
 - B. to compare companies which are different sizes.
 - C. to identify companies with different capital structures.
 - D. to compare companies which are operating in different countries.
-

4. Credit analysis of a bond issuer is least likely to involve:

- A. valuation of the issuing firm.
- B. projecting cash flows to see if they are sufficient to cover interest payments.
- C. assessing the risk the issuer cannot repay interest or principal on the bond.
- D. assessing the willingness of the issuer to meet future contractual payments.



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3. Common-size statements are least likely to be used for cross-sectional analysis because they allow analysts:

- A. to identify trends in a company's performance.
- B. to compare companies which are different sizes.
- C. to identify companies with different capital structures.
- D. to compare companies which are operating in different countries.

Correct Answer: A **LOS: Reading 41-a**

Cross-sectional analysis compares a ratio from one company against one from another company, or against the overall sector, for a specific period. Common-size statements allow for comparison of different-sized companies and ones operating in different currencies.

Reference: CFA® Program Curriculum, Volume 3, pp. 576-577.

4. Credit analysis of a bond issuer is least likely to involve:

- A. valuation of the issuing firm.
- B. projecting cash flows to see if they are sufficient to cover interest payments.
- C. assessing the risk the issuer cannot repay interest or principal on the bond.
- D. assessing the willingness of the issuer to meet future contractual payments.

Correct Answer: A **LOS: Reading 41-g**

Credit analysis is assessing the risk that a counterparty or debtor will not be able to make promised payments. The valuation of the issuing firm would be of primary interest to equity, rather than credit, analysts.

Reference: CFA® Program Curriculum, Volume 3, pp. 616-619.



5. When a company uses both operating and capital leases an analyst should add the present value of which type of lease to the assets and liabilities in the balance sheet?

	Assets	Liabilities
A.	capital only	capital only
B.	operating only	operating only
C.	no adjustment	operating only
D.	operating and capital	operating and capital

6. When a company switches from debt to equity financing this is likely to:

- A. increase its interest coverage.
- B. reduce its fixed asset turnover.
- C. increase its debt-to-equity ratio.
- D. increase its financial leverage ratio.



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5. When a company uses both operating and capital leases an analyst should add the present value of which type of lease to the assets and liabilities in the balance sheet?

	Assets	Liabilities
A.	capital only	capital only
B.	operating only	operating only
C.	no adjustment	operating only
D.	operating and capital	operating and capital

Correct Answer: B.....LOS: Reading 42-e

Capital leases will already be recorded on the balance sheet so there is no need to make an adjustment. However operating leases are a form of off-balance sheet financing so both the assets and liabilities should be adjusted.

Reference: CFA® Program Curriculum, Volume 3, pp. 664-671.

6. When a company switches from debt to equity financing this is likely to:

- A. increase its interest coverage.
- B. reduce its fixed asset turnover.
- C. increase its debt-to-equity ratio.
- D. increase its financial leverage ratio.

Correct Answer: A.....LOS: Reading 41-d

B is not correct since the fixed asset turnover will be unchanged.

C is not correct since its debt-to-equity ratio will decrease.

D is not correct since its financial leverage ratio, which is total assets/equity, will decrease.

Its interest coverage (EBIT/interest payments) will increase, so A is correct.

Reference: CFA® Program Curriculum, Volume 3 pp. 583-601.



7. The return on total invested capital of ABC Corporation is closest to (see question 5 for financial data) is closest to:

- A. 12.0%.
- B. 13.3%.
- C. 22.0%.
- D. 24.4%.

8. The total asset turnover of ABC Corporation is closest to (see question 5 for financial data):

- A. 0.54.
- B. 0.71.
- C. 1.40.
- D. 1.87.



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7. The return on total invested capital of ABC Corporation is closest to (see question 5 for financial data) is closest to:

- A. 12.0%.
- B. 13.3%.
- C. 22.0%.
- D. 24.4%.

Correct Answer: C LOS: Reading 41-d

$$\begin{aligned}\text{Return on total invested capital} \\ &= \frac{\text{EBIT}}{\text{average total invested capital}} \\ &= \frac{55}{85 + 165} = 22.0\%\end{aligned}$$

Reference: CFA® Program Curriculum, Volume 3, pp. 597-601.

8. The total asset turnover of ABC Corporation is closest to (see question 5 for financial data):

- A. 0.54.
- B. 0.71.
- C. 1.40.
- D. 1.87.

Correct Answer: A LOS: Reading 41-d

$$\begin{aligned}\text{Total asset turnover} &= \text{net sales/average total net assets} \\ &= \frac{150}{280} = 0.54\end{aligned}$$

Reference: CFA® Program Curriculum, Volume 3, pp. 583-586.



9. Which of the following is most accurate regarding whether LIFO and FIFO can be used for inventory accounting under U.S. GAAP and International Financial Reporting Standards (IFRS)?

	U.S. GAAP	IFRS
A.	FIFO only	LIFO only
B.	LIFO only	FIFO only
C.	LIFO or FIFO	FIFO only
D.	LIFO or FIFO	LIFO or FIFO

10. If a firm has an interest coverage ratio of 3, the company will just be able to pay its interest costs from current earnings if earnings before interest and tax decline by:

- A. 20.00%.
- B. 33.33%.
- C. 66.66%.
- D. 300.00%.



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9. Which of the following is most accurate regarding whether LIFO and FIFO can be used for inventory accounting under U.S. GAAP and International Financial Reporting Standards (IFRS)?

- | | U.S. GAAP | IFRS |
|----|--------------|--------------|
| A. | FIFO only | LIFO only |
| B. | LIFO only | FIFO only |
| C. | LIFO or FIFO | FIFO only |
| D. | LIFO or FIFO | LIFO or FIFO |

Correct Answer: C **LOS: Reading 42-e**

Under IFRS the use of LIFO is prohibited. Under U.S. GAAP both measures can be used.

Reference: CFA® Program Curriculum, Volume 3, pp. 657-660.

10. If a firm has an interest coverage ratio of 3, the company will just be able to pay its interest costs from current earnings if earnings before interest and tax decline by:

- A. 20.00%.
- B. 33.33%.
- C. 66.66%.
- D. 300.00%.

Correct Answer: C **LOS: Reading 41-d**

$$\text{Interest coverage} = \frac{\text{EBIT}}{\text{interest expense}}$$

If the interest cover falls to 1, EBIT will fall to a third of its original value i.e. decline by 66.67%.

Reference: CFA® Program Curriculum, Volume 3, pp. 594-597.



11. When a company increases the dividend pay out ratio, it is most likely to lead to the sustainable potential growth rate of the company:

- A. falling.
 - B. rising.
 - C. being unaffected.
 - D. rising or falling depending on the ROE relative to the cost of capital.
-

12. If a manufacturing company has a very low total asset turnover compared to its competitors this could be explained by:

- A. the company is using older, and in many cases fully depreciated, machinery.
- B. the company has too much capital invested in assets for the size of its revenue.
- C. the company uses operating leases rather than outright purchase for its machinery.
- D. the company is not making sufficient investment in its business to support future growth.



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11. When a company increases the dividend pay out ratio, it is most likely to lead to the sustainable potential growth rate of the company:

- A. falling.
- B. rising.
- C. being unaffected.
- D. rising or falling depending on the ROE relative to the cost of capital.

Correct Answer: A.....**LOS: Reading 41-g**

Sustainable potential growth rate = retention rate x ROE

If the dividend pay out ratio increases the retention rate will fall, reducing the future growth rate.

Reference: CFA® Program Curriculum, Volume 3, pp. 610-613.

12. If a manufacturing company has a very low total asset turnover compared to its competitors this could be explained by:

- A. the company is using older, and in many cases fully depreciated, machinery.
- B. the company has too much capital invested in assets for the size of its revenue.
- C. the company uses operating leases rather than outright purchase for its machinery.
- D. the company is not making sufficient investment in its business to support future growth.

Correct Answer: B.....**LOS: Reading 41-d**

Total asset turnover = net sales/average total assets

A is not correct since using old machinery would reduce total net assets and increase the asset turnover.

C is not correct since it would imply that the asset value was potentially lower than its competitors.

D is not correct since this would again imply that too few assets are being used.

Reference: CFA® Program Curriculum, Volume 3, pp. 583-589.



13. Which of the following is a characteristic of a firm that would be least likely to reduce credit risk?
The firm:

- A. has stable profit margins.
 - B. is operating in a niche market.
 - C. has high operational efficiency.
 - D. has a high retained cash flow to debt ratio.
-

14. If a company has grown internally and is being compared against one which has grown by acquisition, the company which has grown internally would tend to have:

- A. lower leverage.
- B. lower return on assets.
- C. lower return on equity.
- D. higher price/book value.



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13. Which of the following is a characteristic of a firm that would be least likely to reduce credit risk?

The firm:

- A. has stable profit margins.
- B. is operating in a niche market.
- C. has high operational efficiency.
- D. has a high retained cash flow to debt ratio.

Correct Answer: B.....LOS: Reading 42-c

A firm that is diversified, both in terms of products and clients, would generally be considered lower risk. Also a larger company would have better purchasing power with its suppliers so better be able to withstand a downturn.

Reference: CFA® Program Curriculum, Volume 3, pp. 649-652.

14. If a company has grown internally and is being compared against one which has grown by acquisition, the company which has grown internally would tend to have:

- A. lower leverage.
- B. lower return on assets.
- C. lower return on equity.
- D. higher price/book value.

Correct Answer: D.....LOS: Reading 42-e

If a company has grown by acquisition it will report assets on its balance sheet reflecting the purchase of staff expertise, brand names, research, and probably goodwill (assuming they have not been written off). If a company has grown internally it will have expensed similar items and therefore will have a smaller asset base. Other things being equal this will lead to higher return on assets or equity, higher leverage (since equity falls proportionately more than assets), lower book value per share so higher price/book value, so D is correct.

Reference: CFA® Program Curriculum, Volume 3, pp. 662-664.



15. South Inc.'s net annual sales for the same period were \$6,825,000 and receivables were unchanged from the previous year (ref. Question 14). The days of sales outstanding for the year is closest to:

- A. 10.5 days.
- B. 34.3 days.
- C. 34.8 days.
- D. 38.3 days.

16. If a firm has a net profit margin of 6%, earnings per share of \$1.20, a dividend pay out ratio of 30% and return on equity of 15%. Its sustainable potential growth rate is closest to:

- A. 4.2%.
- B. 4.5%.
- C. 9.0%.
- D. 10.5%.



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15. South Inc.'s net annual sales for the same period were \$6,825,000 and receivables were unchanged from the previous year (ref. Question 14). The days of sales outstanding for the year is closest to:

- A. 10.5 days.
- B. 34.3 days.
- C. 34.8 days.
- D. 38.3 days.

Correct Answer: C LOS: Reading 41-d

$$\begin{aligned}\text{Receivables turnover} &= \frac{\text{net annual sales}}{\text{average receivables}} \\ &= \frac{6,825,000}{650,000} = 10.5\end{aligned}$$

$$\begin{aligned}\text{Days of sales outstanding} &= \frac{365}{\text{receivables turnover}} \\ &= 34.8 \text{ days}\end{aligned}$$

Reference: CFA® Program Curriculum, Volume 3, pp. 583-586.

16. If a firm has a net profit margin of 6%, earnings per share of \$1.20, a dividend pay out ratio of 30% and return on equity of 15%. Its sustainable potential growth rate is closest to:

- A. 4.2%.
- B. 4.5%.
- C. 9.0%.
- D. 10.5%.

Correct Answer: D LOS: Reading 41-f

$$\text{The sustainable growth rate} = \text{earnings retention rate} \times \text{ROE} = 0.70 \times 0.15 = 10.5\%$$

Reference: CFA® Program Curriculum, Volume 3, pp. 610-613.



17. A firm's fixed charge coverage has risen from five to seven times. This is least likely to be explained by:

- A. the firm's operating profit margins have increased.
 - B. the firm has refinanced and reduced the interest rate it pays on its debt.
 - C. the firm has issued new equity and reduced the debt on the balance sheet.
 - D. the firm has changed its policy and has started using operating lease arrangements to acquire the use of fixed assets.
-

18. The cash conversion cycle is:

- A. net sales divided by cash plus marketable securities.
- B. cost of goods sold divided by cash plus marketable securities.
- C. the average time period between the outlay of cash and the collection of related cash.
- D. the average time period between a sale being recorded and cash being collected from customers.



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17. A firm's fixed charge coverage has risen from five to seven times. This is least likely to be explained by:

- A. the firm's operating profit margins have increased.
- B. the firm has refinanced and reduced the interest rate it pays on its debt.
- C. the firm has issued new equity and reduced the debt on the balance sheet.
- D. the firm has changed its policy and has started using operating lease arrangements to acquire the use of fixed assets.

Correct Answer: D. **LOS: Reading 41-d**

Fixed charge coverage is EBIT plus lease payments divided by interest payments plus lease payments. An increase in operating profit margins will tend to increase EBIT and increase fixed financial cost coverage. Answers B and C would reduce interest expense and increase fixed financial cost coverage.

Using more operating leases will increase the lease expense which would not explain the increase in fixed financial cost coverage (given the original coverage was five, the percentage change in denominator will be more than the percentage change in numerator).

Reference: CFA® Program Curriculum, Volume 3, pp. 593-597.

18. The cash conversion cycle is:

- A. net sales divided by cash plus marketable securities.
- B. cost of goods sold divided by cash plus marketable securities.
- C. the average time period between the outlay of cash and the collection of related cash.
- D. the average time period between a sale being recorded and cash being collected from customers.

Correct Answer: C **LOS: Reading 41-d**

The cash conversion cycle is the number of days that cash is tied up in inventory and then waiting for payment by customers, less the time that the company has before it must pay suppliers.

Reference: CFA® Program Curriculum, Volume 3, pp. 583-593.



19. An increase in a firm's marketing costs would be least likely to affect:

- A. Net margins.
- B. gross margins.
- C. return on assets.
- D. operating margins.

20. The following financial information is given for a company:

Net profit margin	= 3%
Operating profit margin	= 10%
Asset turnover	= 1.5
Financial leverage	= 1.8
Interest burden	= 0.8

The return on equity is closest to:

- A. 3.6%.
- B. 6.5%.
- C. 8.1%.
- D. 27.0%.



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19. An increase in a firm's marketing costs would be least likely to affect:

- A. Net margins.
- B. gross margins.
- C. return on assets.
- D. operating margins.

Correct Answer: C **LOS: Reading 41-d**

Gross profit is sales minus cost of goods sold and therefore would be a decline in raw material costs.

Marketing costs are an operating cost and there for would impact on operating and net margins and return on assets.

Reference: CFA® Program Curriculum, Volume 3, pp. 597-601.

20. The following financial information is given for a company:

Net profit margin	= 3%
Operating profit margin	= 10%
Asset turnover	= 1.5
Financial leverage	= 1.8
Interest burden	= 0.8

The return on equity is closest to:

- A. 3.6%.
- B. 6.5%.
- C. 8.1%.
- D. 27.0%.

Correct Answer: C **LOS: Reading 41-f**

Return on equity = net profit margin x asset turnover x financial leverage
= $0.03 \times 1.5 \times 1.8$
= 8.1%

Reference: CFA® Program Curriculum, Volume 3, pp. 604-608.



21. Under International Financial Reporting Standards (IFRS) when an acquirer of another company pays less than the fair value of its net identifiable assets then:

- A. negative goodwill is recognized.
 - B. a gain is recorded in the accounts.
 - C. the difference in value is accounted for as an extraordinary item.
 - D. the value of each acquired asset is revised upwards so that there is no goodwill recognized.
-

22. Under International Financial Reporting Standards (IFRS) when a company receives a dividend, and when it pays a dividend, these activities are classified as follows:

- | | Dividends received | Dividends paid |
|----|------------------------|------------------------|
| A. | investing | financing |
| B. | operating | operating |
| C. | operating or investing | operating or investing |
| D. | operating or investing | operating or financing |



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21. Under International Financial Reporting Standards (IFRS) when an acquirer of another company pays less than the fair value of its net identifiable assets then:

- A. negative goodwill is recognized.
- B. a gain is recorded in the accounts.
- C. the difference in value is accounted for as an extraordinary item.
- D. the value of each acquired asset is revised upwards so that there is no goodwill recognized.

Correct Answer: B..... **LOS: Reading 43-b**

The value of the assets and liabilities acquired should be reassessed and if the company is still paying less than their fair value a gain is recognized. Extraordinary items are not permitted under IFRS.

Reference: CFA® Program Curriculum, Volume 3, pp. 685-689.

22. Under International Financial Reporting Standards (IFRS) when a company receives a dividend, and when it pays a dividend, these activities are classified as follows:

- | | Dividends received | Dividends paid |
|----|------------------------|------------------------|
| A. | investing | financing |
| B. | operating | operating |
| C. | operating or investing | operating or investing |
| D. | operating or investing | operating or financing |

Correct Answer: D..... **LOS: Reading 43-d**

IFRS allows flexibility over classification of dividends paid and received, dividends received can be classified as operating or investing, and dividends paid as operating or financing. Under U.S. GAAP dividends received are an operating item and dividends paid a financing item.

Reference: CFA® Program Curriculum, Volume 3, pp. 694-695.



23. When a screening model is back-tested one of the limitations is look-ahead bias, this refers to:
- A. when financial data has been updated so no longer represents the information investors would have seen at the time.
 - B. the model has been built from a data base that is the same data base used in back-testing; the model may not work when looking forward.
 - C. only companies that have not gone bankrupt or been taken over are included in the database, which overstates the anticipated success of the model.
 - D. the model is based on forecasts made at the time rather than actual outcomes; this will create bias when financial results are not in line with consensus expectations.
-

24. A firm has nearly fully depreciated its plant, property and equipment and then recognizes that its fair value is above its book value. Under U.S. GAAP and International Financial Reporting Standards (IFRS) the permitted treatment is to:

	U.S. GAAP	IFRS
A.	revalue	revalue
B.	revalue	not revalue
C.	not revalue	revalue
D.	not revalue	not revalue



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23. When a screening model is back-tested one of the limitations is look-ahead bias, this refers to:

- A. when financial data has been updated so no longer represents the information investors would have seen at the time.
- B. the model has been built from a data base that is the same data base used in back-testing; the model may not work when looking forward.
- C. only companies that have not gone bankrupt or been taken over are included in the database, which overstates the anticipated success of the model.
- D. the model is based on forecasts made at the time rather than actual outcomes; this will create bias when financial results are not in line with consensus expectations.

Correct Answer: A **LOS: Reading 42-d**

Look-ahead bias is when the financial data in the database has been subsequently updated, perhaps to reflect errors or changes in accounting principles. In this case investors in the past would not have seen the data that is being used, which invalidates the testing process.

Reference: CFA® Program Curriculum, Volume 3, pp. 652-656.

24. A firm has nearly fully depreciated its plant, property and equipment and then recognizes that its fair value is above its book value. Under U.S. GAAP and International Financial Reporting Standards (IFRS) the permitted treatment is to:

- | | U.S. GAAP | IFRS |
|----|-------------|-------------|
| A. | revalue | revalue |
| B. | revalue | not revalue |
| C. | not revalue | revalue |
| D. | not revalue | not revalue |

Correct Answer: C **LOS: Reading 43-a**

Under IFRS, but not under U.S. GAAP, the upwards revaluation of plant, property and equipment is allowed.

Reference: CFA® Program Curriculum, Volume 3, p. 684.



25. An analyst is building a model to forecast which companies have a high risk of going bankrupt. The input he is least likely to use is each company's:

- A. current ratio.
 - B. net profit margin.
 - C. debt-to-assets ratio.
 - D. fixed charge coverage.
-

26. When a company uses operating leases and an analyst makes adjustments to the financial statements to adjust for these leases, the effect will be to:

- A. reduce asset turnover.
- B. increase interest coverage
- C. reduce the debt-to-assets ratio.
- D. reduce the depreciation expense.



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25. An analyst is building a model to forecast which companies have a high risk of going bankrupt. The input he is least likely to use is each company's:

- A. current ratio.
- B. net profit margin.
- C. debt-to-assets ratio.
- D. fixed charge coverage.

Correct Answer: B..... **LOS: Reading 41-d**

The analyst is likely to focus on ratios which measure solvency and liquidity. Net profit margin does not incorporate balance sheet items and is least likely to be included.

Reference: CFA® Program Curriculum, Volume 3, pp. 590-597.

26. When a company uses operating leases and an analyst makes adjustments to the financial statements to adjust for these leases, the effect will be to:

- A. reduce asset turnover.
- B. increase interest coverage
- C. reduce the debt-to-assets ratio.
- D. reduce the depreciation expense.

Correct Answer: A **LOS: Reading 42-e**

Asset turnover (sales/assets) will be reduced as the asset base will be larger.

Interest coverage will usually fall as interest expense is recorded and depreciation of the leased assets will also be recorded increasing depreciation expense. The debts-to-assets ratio will increase as the increase in debt is proportionately more than the increase in assets.

Reference: CFA® Program Curriculum, Volume 3, pp. 664-671.



27. Data is provided on two companies as shown below:

	Company ABC	Company XYZ
Market capitalization	\$137 million	\$28 million
Shareholder's equity	\$86 million	\$15 million
Goodwill	\$22 million	\$3 million
Other intangible	\$35 million	\$4 million

The price/tangible book value ratios for both companies are closest to

	Company ABC	Company XYZ
A.	2.14	2.33
B.	2.40	4.00
C.	2.69	2.54
D.	4.72	3.50

28. The payables turnover ratio, assuming there is no change in inventory levels over the year, of ABC Corporation is closest to (see question 5 for financial data):

- A. 0.2.
- B. 0.4.
- C. 2.5.
- D. 5.0.



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27. Data is provided on two companies as shown below:

	Company ABC	Company XYZ
Market capitalization	\$137 million	\$28 million
Shareholder's equity	\$86 million	\$15 million
Goodwill	\$22 million	\$3 million
Other intangible	\$35 million	\$4 million

The price/tangible book value ratios for both companies are closest to

	Company ABC	Company XYZ
A.	2.14	2.33
B.	2.40	4.00
C.	2.69	2.54
D.	4.72	3.50

Correct Answer: D.....LOS: Reading 42-e

The tangible book value for Company ABC is $(\$86 - \$22 - \$35)$ million = \$29 million Price/tangible book value ratio for Company ABC is $137/29 = 4.72$

The tangible book value for Company XYZ is $(\$15 - \$3 - \$4)$ million = \$8 million Price/tangible book value ratio for Company ABC is $28/8 = 3.50$

Reference: CFA® Program Curriculum, Volume 3, pp. 662-664.



28. The payables turnover ratio, assuming there is no change in inventory levels over the year, of ABC Corporation is closest to (see question 5 for financial data):

- A. 0.2.
- B. 0.4.
- C. 2.5.
- D. 5.0.

Correct Answer: C.....LOS: Reading 41-d

$$\text{Payables turnover ratio} = \frac{\text{COGS}}{\text{average trade payables}} = \frac{75}{30} = 2.5$$

Reference: CFA® Program Curriculum, Volume 3, pp. 583-586.



Study Session 11: Corporate Finance:

This study session covers the principles that corporations use to make their investing and financing decisions. Capital budgeting is the process of making decisions about which long-term projects the corporation should accept for investment, and which it should reject. Both the expected return of a project and the financing cost should be taken into account. The cost of capital, or the rate of return required for a project, must be developed using economically sound methods.

Corporate managers are concerned with liquidity and solvency, and use financial statements to evaluate performance as well as to develop and communicate future plans. The final reading in this study session is on corporate governance practices, which can expose the firm to a heightened risk of ethical lapses. Although these practices may not be inherently unethical, they create the potential for conflicts of interest to develop between shareholders and managers, and the extent of that conflict affects the firm's valuation.

Reading 44: Capital Budgeting

Reading 45: Cost of Capital

Reading 46: Working Capital Management

Reading 47: Financial Statement Analysis

Reading 48: The Corporate Governance of Listed Companies:

A Manual for Investors



1. Which of the following cash flows should not be included in capital budgeting cash flow analysis?

- A. Sunk costs.
 - B. Externalities.
 - C. Cannibalization.
 - D. Opportunity costs.
-

2. The net operating cycle for a company has been getting longer. This is most likely to be explained by:

- A. the company is increasing its inventory turnover.
- B. the company's operating margins have been declining.
- C. the company has been delaying payment to its suppliers.
- D. the company is taking longer to collect on its credit accounts.



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1. Which of the following cash flows should not be included in capital budgeting cash flow analysis?

- A. Sunk costs.
- B. Externalities.
- C. Cannibalization.
- D. Opportunity costs.

Correct Answer: A **LOS: Reading 44-b**

Sunk costs should not be included since they will not affect future cash flows or impact on incremental cash flows.

Reference: CFA® Program Curriculum, Volume 4, p. 11.

2. The net operating cycle for a company has been getting longer. This is most likely to be explained by:

- A. the company is increasing its inventory turnover.
- B. the company's operating margins have been declining.
- C. the company has been delaying payment to its suppliers.
- D. the company is taking longer to collect on its credit accounts.

Correct Answer: D **LOS: Reading 46-b**

The net operating cycle or cash conversion cycle is

= number of days of receivables + number of days of inventory – number of days of payables

The company is taking longer to collect on its credit accounts means that it is collecting receivables more slowly so its net operating cycle or cash conversion cycle is getting longer.

Reference: CFA® Program Curriculum, Volume 4, pp. 89-95.



3. Patricia Rice, an independent member of the board of Ashburton Pet Foods, proposes an amendment to the articles of association. She proposes that the board can independently, without first seeking management's approval, hire external consultants when it sees fit. She also requests that an appropriate budget is allocated for this purpose.

Which statement is most accurate?

- A. The proposal is unjustified because it would undermine the authority of the management.
 - B. The only way to counter such a proposal is to improve the compensation package of the members of the board.
 - C. The proposal only makes sense if management approval is sought first and the required expertise relates to auditing matters.
 - D. The proposal conforms to modern corporate governance practices specifically when the required expertise relates to financial matters and/or reputational concerns.
-

4. ABC Corp. has a 6% ten-year bond outstanding, which is trading at a yield to maturity of 8%. The company's marginal tax rate is 40%. The component cost of debt for ABC Corp. is closest to:

- A. 3.6%.
- B. 4.8%.
- C. 6.0%.
- D. 8.0%.



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3. Patricia Rice, an independent member of the board of Ashburton Pet Foods, proposes an amendment to the articles of association. She proposes that the board can independently, without first seeking management's approval, hire external consultants when it sees fit. She also requests that an appropriate budget is allocated for this purpose.

Which statement is most accurate?

- A. The proposal is unjustified because it would undermine the authority of the management.
- B. The only way to counter such a proposal is to improve the compensation package of the members of the board.
- C. The proposal only makes sense if management approval is sought first and the required expertise relates to auditing matters.
- D. The proposal conforms to modern corporate governance practices specifically when the required expertise relates to financial matters and/or reputational concerns.

Correct Answer: D..... **LOS: Reading 48-b**

Rice's proposal is perfectly valid and in line with modern corporate governance practices.

Reference: CFA® Program Curriculum, Volume 4, p. 168.

4. ABC Corp. has a 6% ten-year bond outstanding, which is trading at a yield to maturity of 8%. The company's marginal tax rate is 40%. The component cost of debt for ABC Corp. is closest to:

- A. 3.6%.
- B. 4.8%.
- C. 6.0%.
- D. 8.0%.

Correct Answer: B..... **LOS: Reading 45-f**

The cost of debt is the required return of investors in the bond, which is the yield to maturity, less tax savings which is:

$$\text{Cost of debt} = k_d (1 - T) = 8\% \times (1.00 - 0.40) = 4.8\%$$

Reference: CFA® Program Curriculum, Volume 4, pp. 45-46.



5. ABC Corp. issued nonconvertible, noncallable preferred stock last year at an issue price of \$100; it pays a dividend of \$5 per annum. The stock is now trading at \$110. The company's marginal tax rate is 40%. The cost of preferred stock for ABC Corp is closest to:

- A. 2.7%.
 - B. 3.0%.
 - C. 4.5%.
 - D. 5.0%.
-

6. The beta of ABC's common stock is 1.1, the dividend paid is \$3.50, and the stock price is \$82.00. The expected market return is 12% and the risk-free rate is 6%. The cost of equity is closest to:

- A. 4.3%.
- B. 6.6%.
- C. 12.6%.
- D. 13.2%.



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5. ABC Corp. issued nonconvertible, noncallable preferred stock last year at an issue price of \$100; it pays a dividend of \$5 per annum. The stock is now trading at \$110. The company's marginal tax rate is 40%. The cost of preferred stock for ABC Corp is closest to:

- A. 2.7%.
- B. 3.0%.
- C. 4.5%.
- D. 5.0%.

Correct Answer: CLOS: Reading 45-g

The cost of preferred stock is the dividend divided by the price. There is no adjustment for tax, since a preferred dividend is not a tax deductible expense.

The cost is $\$5/\$110 = 4.5\%$

Reference: CFA® Program Curriculum, Volume 4, pp. 48-49.

6. The beta of ABC's common stock is 1.1, the dividend paid is \$3.50, and the stock price is \$82.00. The expected market return is 12% and the risk-free rate is 6%. The cost of equity is closest to:

- A. 4.3%.
- B. 6.6%.
- C. 12.6%.
- D. 13.2%.

Correct Answer: CLOS: Reading 45-h

Using CAPM to calculate the cost of equity gives:

$$k_e = k_{RF} + \beta(k_M - k_{RF}) = 6\% + 1.1(12\% - 6\%) = 12.6\%$$

Reference: CFA® Program Curriculum, Volume 4, pp. 50-51.



7. Proforma analysis will typically involve forecasting a financing deficit or surplus, this is because:
- A. there is a combination of sales-driven and fixed burdens estimates.
 - B. total assets will generally grow at a significantly different rate to sales.
 - C. sales will generally grow at a significantly different rate to costs of goods sold.
 - D. items on the income statement are fixed, but there are no fixed items on the balance sheet.
-

8. When calculating cash flows for capital budgeting cash flow analysis, which of the following statements is most accurate?
- A. Interest payments should not be included since the cost of capital includes the cost of debt.
 - B. Gross interest payments should be included since the cost of capital includes the cost of debt.
 - C. Interest payments reflecting long-term debt should be included since the cost of capital includes the cost of debt.
 - D. Interest payments net of tax should be included since the cost of capital includes the after-tax cost of debt.



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7. Proforma analysis will typically involve forecasting a financing deficit or surplus, this is because:
- A. there is a combination of sales-driven and fixed burdens estimates.
 - B. total assets will generally grow at a significantly different rate to sales.
 - C. sales will generally grow at a significantly different rate to costs of goods sold.
 - D. items on the income statement are fixed, but there are no fixed items on the balance sheet.

Correct Answer: A **LOS: Reading 47-b**

If all accounts were sales driven there would not be a problem, but some items such as interest will be based on fixed long-term debt creating the financing deficit or surplus.

Reference: CFA® Program Curriculum, Volume 4, pp. 149-153.

8. When calculating cash flows for capital budgeting cash flow analysis, which of the following statements is most accurate?
- A. Interest payments should not be included since the cost of capital includes the cost of debt.
 - B. Gross interest payments should be included since the cost of capital includes the cost of debt.
 - C. Interest payments reflecting long-term debt should be included since the cost of capital includes the cost of debt.
 - D. Interest payments net of tax should be included since the cost of capital includes the after-tax cost of debt.

Correct Answer: A **LOS: Reading 44-b**

The weighted cost of capital includes the cost of debt so the cash flow available for bond and equity holders should be used, i.e. before interest payments.

Reference: CFA® Program Curriculum, Volume 4, p. 10.



9. When two projects are mutually exclusive then:
- A. it is better to use the net present value method to evaluate the projects since it is easier to calculate.
 - B. it is better to use the internal rate of return method to evaluate the projects since it is widely accepted in industry.
 - C. it is better to use the net present value method to evaluate the projects since it is based on the assumption that the projects' cash flows are reinvested at the cost of capital.
 - D. it is better to use the internal rate of return method to evaluate the projects since it is based on the assumption that the projects' cash flows are reinvested at the cost of capital.
-

10. A firm reports the following financial information:

Operating profit margin	= 30%
Tax retention rate	= 80%
Financial leverage multiplier	= 3.5
Interest expense rate	= 0.2

Under the DuPont system the return on equity is closest to:

- A. 1.4%.
- B. 16.8%.
- C. 26.3%.
- D. there is insufficient information to calculate the return on equity.



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9. When two projects are mutually exclusive then:

- A. it is better to use the net present value method to evaluate the projects since it is easier to calculate.
- B. it is better to use the internal rate of return method to evaluate the projects since it is widely accepted in industry.
- C. it is better to use the net present value method to evaluate the projects since it is based on the assumption that the projects' cash flows are reinvested at the cost of capital.
- D. it is better to use the internal rate of return method to evaluate the projects since it is based on the assumption that the projects' cash flows are reinvested at the cost of capital.

Correct Answer: C **LOS: Reading 44-e**

If a company is evaluating mutually exclusive projects the crossover rate is critical in deciding which project to pursue. The cost of capital should be used since this better reflects the reinvestment options available to the company. The cost of capital is used in the NPV method.

Reference: CFA® Program Curriculum, Volume 4, pp. 19-24.

10. A firm reports the following financial information:

Operating profit margin	= 30%
Tax retention rate	= 80%
Financial leverage multiplier	= 3.5
Interest expense rate	= 0.2

Under the DuPont system the return on equity is closest to:

- A. 1.4%.
- B. 16.8%.
- C. 26.3%.
- D. there is insufficient information to calculate the return on equity.

Correct Answer: D **LOS: Reading 47-a**

The total asset turnover is needed to calculate the return on equity.

Reference: CFA® Program Curriculum, Volume 4, pp. 136-145.



11. The quick ratio of a firm is lower than the industry average whereas its current ratio is higher than the industry average. This is most likely to be explained by the firm having, relative to the industry average, high:

- A. cash levels.
 - B. receivables.
 - C. inventory levels.
 - D. current liabilities.
-

12. A \$1,000,000 project has the following cash flows, \$500,000 at the end of the first year, \$400,000 at the end of the second year and \$300,000 at the end of each year thereafter. If the cost of capital is 10%, the discounted payback period is closest to:

- A. 2.00 years.
- B. 2.33 years.
- C. 2.95 years.
- D. 3.00 years.



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11. The quick ratio of a firm is lower than the industry average whereas its current ratio is higher than the industry average. This is most likely to be explained by the firm having, relative to the industry average, high:

- A. cash levels.
- B. receivables.
- C. inventory levels.
- D. current liabilities.

Correct Answer: C **LOS: Reading 46-a**

Current ratio = $\frac{\text{current assets}}{\text{current liabilities}}$

Quick ratio = $\frac{(\text{cash} + \text{marketable securities} + \text{receivables})}{\text{current liabilities}}$

If the quick ratio is lower and the current ratio is higher, it looks as if the inventory (usually the main difference between the two ratios) is proportionately high for the company.

Reference: CFA® Program Curriculum, Volume 4, pp. 89-90.

12. A \$1,000,000 project has the following cash flows, \$500,000 at the end of the first year, \$400,000 at the end of the second year and \$300,000 at the end of each year thereafter. If the cost of capital is 10%, the discounted payback period is closest to:

- A. 2.00 years.
- B. 2.33 years.
- C. 2.95 years.
- D. 3.00 years.

Correct Answer: C **LOS: Reading 44-d**

The discounted payback period is the number of years that it will take for the costs of the project to be recovered based on cash flows discounted at the cost of capital.

The discounted values of the cash flows in the first three years are: \$454,545.50, \$330,578.50 and \$225,394.40 respectively. Payback will occur \$214,876.00/\$225,394.40 into the third year, i.e. 95% of the way through the year.

Reference: CFA® Program Curriculum, Volume 4, pp. 16-17.



13. Southeast Inc.'s existing operations have a beta of 0.9 and its cost of capital is 14%. The risk-free rate is 6%. It is considering investing in a new project that has a beta of 1.4, the company's assets would then be split between 75% in the original business and 25% in the new project. The company will remain debt free. If the new project does not alter the valuation of the company the new cost of capital for the company is closest to:

- A. 14.9%.
- B. 15.1%.
- C. 16.2%.
- D. 18.5%.

14. A company is forecasting its short-term cash flows, which of the following items is a cash outflow?

- A. tax refunds.
- B. debt repayments.
- C. maturing investments.
- D. receipts from operations.



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13. Southeast Inc.'s existing operations have a beta of 0.9 and its cost of capital is 14%. The risk-free rate is 6%. It is considering investing in a new project that has a beta of 1.4, the company's assets would then be split between 75% in the original business and 25% in the new project. The company will remain debt free. If the new project does not alter the valuation of the company the new cost of capital for the company is closest to:

- A. 14.9%.
- B. 15.1%.
- C. 16.2%.
- D. 18.5%.

Correct Answer: B..... LOS: Reading 45-j

The market return is given by applying CAPM to the original business:

$$k_s = k_{RF} + \beta(k_M - k_{RF})$$

$$14\% = 6\% + 0.9(k_M - 6\%)$$

$$k_M = 14.9\%$$

The required return for the new business is $6\% + 1.4(14.9\% - 6\%) = 18.46\%$

The weighted-average required return = $(0.75 \times 14\%) + (0.25 \times 18.46\%) = 15.1\%$

This is the same as the cost of capital.

Reference: CFA® Program Curriculum, Volume 4, pp. 64-67.

14. A company is forecasting its short-term cash flows, which of the following items is a cash outflow?

- A. tax refunds.
- B. debt repayments.
- C. maturing investments.
- D. receipts from operations.

Correct Answer: B..... LOS: Reading 46-c

Debt repayments will involve cash outflows to the parties that the company has borrowed from. All other items are cash inflows.

Reference: CFA® Program Curriculum, Volume 4, pp. 96-97.



15. Evaluation of a project is least likely to involve which of the following steps?
- A. Estimating the cash flows from the project.
 - B. Estimating the risk associated with the cash flows.
 - C. Discounting the cash flows back at the risk-free rate.
 - D. Comparing the cost of the project to the present value of the cash flows.
-

16. A company is currently financed using debt and equity. The market value of debt is \$25 million and the market value of equity is \$40 million. The company has recently announced that it will reduce the proportion of debt financing so the debt to equity ratio is 45%. The current after-tax cost of debt and equity are 8% and 12% respectively. Using the current capital structure and target capital structure, the company's cost of capital are closest to:

	Current	Target
A.	7.4%	10.2%
B.	7.4%	10.8%
C.	10.5%	10.2%
D.	10.5%	10.8%



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15. Evaluation of a project is least likely to involve which of the following steps?

- A. Estimating the cash flows from the project.
- B. Estimating the risk associated with the cash flows.
- C. Discounting the cash flows back at the risk-free rate.
- D. Comparing the cost of the project to the present value of the cash flows.

Correct Answer: C **LOS: Reading 44-a**

The cash flows should be discounted back at the cost of capital (which takes into account the risk of the project).

Reference: CFA® Program Curriculum, Volume 4, pp. 10-11.

16. A company is currently financed using debt and equity. The market value of debt is \$25 million and the market value of equity is \$40 million. The company has recently announced that it will reduce the proportion of debt financing so the debt to equity ratio is 45%. The current after-tax cost of debt and equity are 8% and 12% respectively. Using the current capital structure and target capital structure, the company's cost of capital are closest to:

	Current	Target
A.	7.4%	10.2%
B.	7.4%	10.8%
C.	10.5%	10.2%
D.	10.5%	10.8%

Correct Answer: D **LOS: Reading 45-c**

The current cost of capital is given by:
$$\frac{25 \times 8\% + 40 \times 12\%}{65} = 10.46\%$$

A debt to equity ratio of 45% indicates the target weighting of debt is $45/145 = 31\%$

The target cost of capital is: $(0.31 \times 8\%) + (0.69 \times 12\%) = 10.76\%$

Reference: CFA® Program Curriculum, Volume 4, pp. 41-43.



17. A company gives credit term to its customers and changes the terms from 2/10 net 30 to 2/10 net 20.

This is *most likely* to reduce:

- A. net income.
 - B. cash positions.
 - C. the average days payable.
 - D. the average days of receivables.
-

18. Multiple internal rates of return (IRRs) for a project can occur if:

- A. the cash flows decline each year of the life of the project.
- B. the internal rate of return is a multiple of the crossover rate.
- C. the project requires additional capital expenditure during its life.
- D. projects that are mutually exclusive provide different rates of return.



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17. A company gives credit term to its customers and changes the terms from 2/10 net 30 to 2/10 net 20.

This is *most likely* to reduce:

- A. net income.
- B. cash positions.
- C. the average days payable.
- D. the average days of receivables.

Correct Answer: D..... LOS: Reading 46-d

2/20 net 30 means a 2% discount for paying within 10 days and the net amount is due on the 30th day. Reducing the credit terms to 20 days will lead to cash being collected more quickly than before so D is the Right Answer.

Reference: CFA® Program Curriculum, Volume 4, pp. 120-121.

18. Multiple internal rates of return (IRRs) for a project can occur if:

- A. the cash flows decline each year of the life of the project.
- B. the internal rate of return is a multiple of the crossover rate.
- C. the project requires additional capital expenditure during its life.
- D. projects that are mutually exclusive provide different rates of return.

Correct Answer: C..... LOS: Reading 44-e

A nonconventional project is one which requires cash outflows during or at the end of the life of the project. In this case multiple IRRs will occur.

Reference: CFA® Program Curriculum, Volume 4, pp. 24-47.



19. Matt Owusu-Abeyie has just sold the company he founded, Ashburton Pet Foods, to the public. He has been asked to serve on the board of Ashburton Pet Foods for the next 10 years. Owusu-Abeyie's long-term participation on the board is least likely to lead to:

- A. the share price declining significantly when he retires.
 - B. Owusu-Abeyie developing an accommodating relationship with management.
 - C. making it difficult for Owusu-Abeyie to undo any mistakes he made in the company.
 - D. impairing Owusu-Abeyie's willingness to act in the best interests of shareowners.
-

20. Which of the following methods is the least appropriate to calculate the cost of retained earnings?

- A. Efficient frontier.
- B. Risk premium approach.
- C. Dividend discount model.
- D. Capital Asset Pricing Model.



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19. Matt Owusu-Abeyie has just sold the company he founded, Ashburton Pet Foods, to the public. He has been asked to serve on the board of Ashburton Pet Foods for the next 10 years. Owusu-Abeyie's long-term participation on the board is least likely to lead to:

- A. the share price declining significantly when he retires.
- B. Owusu-Abeyie developing an accommodating relationship with management.
- C. making it difficult for Owusu-Abeyie to undo any mistakes he made in the company.
- D. impairing Owusu-Abeyie's willingness to act in the best interests of shareowners.

Correct Answer: A **LOS: Reading 48-d**

The departure of a long-term board member might signify a rejuvenation of the company and may generate enthusiasm in the market.

Reference: CFA® Program Curriculum, Volume 4, pp. 166-167.

20. Which of the following methods is the least appropriate to calculate the cost of retained earnings?

- A. Efficient frontier.
- B. Risk premium approach.
- C. Dividend discount model.
- D. Capital Asset Pricing Model.

Correct Answer: A **LOS: Reading 45-h**

The efficient frontier provides the optimal mix of securities from a risk-return point of view and is dependent on the input of expected return data for the securities.

Reference: CFA® Program Curriculum, Volume 4, pp. 50-55.



21. The average accounting rate of return (AAR) is least likely to be criticized as a method for evaluating projects because the AAR:

- A. is based on net income.
 - B. does not incorporate the time value of money.
 - C. does not incorporate the required rate of return.
 - D. does not consider the income over the complete life of a project.
-

22. TeleNorth is a publicly-listed telecommunications company which is a privatized partially state-owned entity in the Republic of Norcorrea. The Norcorrean government holds 'golden shares' that carry super-voting rights. Which one of the following statements is most appropriate from a corporate governance point of view?

- A. As a state-owned enterprise, TeleNorth can only appoint a classified board.
- B. Proxy voting is only permitted at the discretion of golden shareholders, i.e. the government.
- C. The separation of voting rights from economic rights may reduce investors' enthusiasm for the shares.
- D. Ordinary shareowners without the super-voting rights automatically lose the right to take legal action for fraudulent charges against the company.



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21. The average accounting rate of return (AAR) is least likely to be criticized as a method for evaluating projects because the AAR:

- A. is based on net income.
- B. does not incorporate the time value of money.
- C. does not incorporate the required rate of return.
- D. does not consider the income over the complete life of a project.

Correct Answer: D..... LOS: Reading 44-d

Criticisms of the AAR include the following:

it is based on net income rather than cash flows,

it does not look at the timing of income, and

it does not distinguish between profitable and unprofitable projects (relative to a required return).

It does however look at the average income over the life of a project so the answer

is D.

Reference: CFA® Program Curriculum, Volume 4, pp. 17-18.

22. TeleNorth is a publicly-listed telecommunications company which is a privatized partially state-owned entity in the Republic of Norcorrea. The Norcorrean government holds 'golden shares' that carry super-voting rights. Which one of the following statements is most appropriate from a corporate governance point of view?

- A. As a state-owned enterprise, TeleNorth can only appoint a classified board.
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- C. The separation of voting rights from economic rights may reduce investors' enthusiasm for the shares.
- D. Ordinary shareowners without the super-voting rights automatically lose the right to take legal action for fraudulent charges against the company.

Correct Answer: C.....LOS: Reading 48-g

Choice A is incorrect from a corporate governance view because a company is free to choose any type of board as long as it satisfactorily protects the long-term interests of the shareowners. Choices B and D are in violation of shareowner rights. Choice C is the correct one.

Reference: CFA® Program Curriculum, Volume 4, pp. 183-186.



23. Alexandra Hleb is an independent board member of Avenell Gastronomy, a publicly listed gourmet restaurant chain. As a board member she is invited to dine at no charge, accompanied with a guest of her choice, in any of the restaurants, once a month.

Hleb loves fine dining and never misses the opportunity to visit an Avenell restaurant to take advantage of the arrangement. This practice:

- A. breaches the code of ethics of the company.
 - B. compromises Hleb's independence as a board member.
 - C. is in violation of the CFA Institute Code and Standards.
 - D. is acceptable as long the limits are clear and fully disclosed.
-

24. Which one of the following is least likely to be an ethical action by a board member?

- A. Avoid conflicts of interest with their position as a board member.
- B. Use their experience to make the right decisions about the company's future.
- C. Align their interests to those of the shareowners, for example by being investors themselves.
- D. Have strong connections with the governments in the countries the company operates in.



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23. Alexandra Hleb is an independent board member of Avenell Gastronomy, a publicly listed gourmet restaurant chain. As a board member she is invited to dine at no charge, accompanied with a guest of her choice, in any of the restaurants, once a month.

Hleb loves fine dining and never misses the opportunity to visit an Avenell restaurant to take advantage of the arrangement. This practice:

- A. breaches the code of ethics of the company.
- B. compromises Hleb's independence as a board member.
- C. is in violation of the CFA Institute Code and Standards.
- D. is acceptable as long the limits are clear and fully disclosed.

Correct Answer: D..... **LOS: Reading 48-b**

If it is part of a transparent compensation scheme, it is still within the boundaries of corporate ethics. So Choice A is incorrect. The board needs further evidence of the lack of independence for Choice B to be correct.

Choice C is not relevant because Hleb's position is not directly linked with the trading of Avenell's securities.

Choice D is the best answer because the frequency of visits and the number of guests are limited so the expenses to the company are reasonably contained and not expected to materially erode the value of the company's shares.

Reference: CFA® Program Curriculum, Volume 4, pp. 178-179.

24. Which one of the following is least likely to be an ethical action by a board member?

- A. Avoid conflicts of interest with their position as a board member.
- B. Use their experience to make the right decisions about the company's future.
- C. Align their interests to those of the shareowners, for example by being investors themselves.
- D. Have strong connections with the governments in the countries the company operates in.

Correct Answer: D..... **LOS: Reading 48-c**

Choice D is questionable from a corporate governance point of view. It might involve some kind of political favor that would not necessarily benefit the long-term interests of the shareowners.

Reference: CFA® Program Curriculum, Volume 4, pp. 164-167.



25. If a company's operating cycle is shorter than its cash conversion cycle it is because the:

- A. company's customers all pay with cash.
- B. company extends credit to its customers.
- C. company operates strict inventory controls.
- D. company uses trade credit for paying its suppliers.

26. A proposed project is expected to increase shareholders' wealth if:

- | | Profitability index | Cost of capital versus internal rate of return |
|----|---------------------|--|
| A. | Less than 1. | Cost of capital is lower. |
| B. | Less than 1. | Cost of capital is higher. |
| C. | Greater than 1. | Cost of capital is lower. |
| D. | Greater than 1. | Cost of capital is higher. |



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25. If a company's operating cycle is shorter than its cash conversion cycle it is because the:

- A. company's customers all pay with cash.
- B. company extends credit to its customers.
- C. company operates strict inventory controls.
- D. company uses trade credit for paying its suppliers.

Correct Answer: D..... **LOS: Reading 46-b**

The operating cycle

= number of days of receivables + number of days of inventory

whereas the net operating cycle or cash conversion cycle

= number of days of receivables + number of days of inventory – number of days of payables

The difference is the number of days of payables which is how long the company takes to pay its suppliers.

Reference: CFA® Program Curriculum, Volume 4, p. 95.

26. A proposed project is expected to increase shareholders' wealth if:

- | | Profitability index | Cost of capital versus internal rate of return |
|----|---------------------|--|
| A. | Less than 1. | Cost of capital is lower. |
| B. | Less than 1. | Cost of capital is higher. |
| C. | Greater than 1. | Cost of capital is lower. |
| D. | Greater than 1. | Cost of capital is higher. |

Correct Answer: C..... **LOS: Reading 44-d**

The profitability index must be greater than one; this indicates the NPV is positive. The internal rate of return must be higher than the cost of capital if the project is going to increase stockholders' wealth.

Reference: CFA® Program Curriculum, Volume 4, pp. 12-19.



27. A major competitor of a company has the same net profit margin and total asset turnover as the company. The competitor's return on equity is higher; this is explained by the competitor having:

- A. a lower tax rate.
 - B. higher financial leverage.
 - C. lower interest costs as a percentage of sales.
 - D. lower interest costs as a percentage of operating profit.
-

28. South Corporation's target capital structure is 50% debt, 10% preferred stock and 40% common equity. If the before-tax costs of debt, preferred stock and common equity are 10%, 11% and 14% respectively and the marginal tax rate is 40% the weighted average cost of capital is closest to:

- A. 9.3%.
- B. 9.7%.
- C. 10.3%.
- D. 11.3%.



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27. A major competitor of a company has the same net profit margin and total asset turnover as the company. The competitor's return on equity is higher; this is explained by the competitor having:

- A. a lower tax rate.
- B. higher financial leverage.
- C. lower interest costs as a percentage of sales.
- D. lower interest costs as a percentage of operating profit.

Correct Answer: B.....LOS: Reading 47-a

Using DuPont analysis we can break down the return on equity as follows:

Return on equity = profit margin x total asset turnover x financial leverage

If the net margin and asset turnover is the same the difference must arise from higher financial leverage.

Reference: CFA® Program Curriculum, Volume 4, pp. 136-145.



28. South Corporation's target capital structure is 50% debt, 10% preferred stock and 40% common equity. If the before-tax costs of debt, preferred stock and common equity are 10%, 11% and 14% respectively and the marginal tax rate is 40% the weighted average cost of capital is closest to:

- A. 9.3%.
- B. 9.7%.
- C. 10.3%.
- D. 11.3%.

Correct Answer: B **LOS: Reading 45-a**

$$\begin{aligned} \text{WACC} &= w_d k_d (1 - T) + w_{ps} k_{ps} + w_e k_e \\ &= (0.50 \times 10\% \times 0.6) + (0.10 \times 11\%) + (0.40 \times 14\%) = 9.7\% \end{aligned}$$

Reference: CFA® Program Curriculum, Volume 4, pp. 38-40.



Study Session 12: Portfolio Management:

As the first discussion within the CFA curriculum on portfolio management, this study session provides the critical framework and context for subsequent Level I study sessions covering equities, fixed income, derivatives, and alternative investments. Furthermore, this study session provides the underlying theories and tools for portfolio management at Levels II and III.

The first reading discusses the asset allocation decision and the portfolio management process—they are an integrated set of steps undertaken in a consistent manner to create and maintain an appropriate portfolio (combination of assets) to meet clients' stated goals. The last two readings focus on the design of a portfolio and introduces the capital asset pricing model (CAPM), a centerpiece of modern financial economics that relates the risk of an asset to its expected return.

Reading 49: The Asset Allocation Decision

Reading 50: An Introduction to Portfolio Management

Reading 51: An Introduction to Asset Pricing Models



1. The Capital Asset Pricing Model says that an investor should:
 - A. calculate the unsystematic risk of an asset.
 - B. calculate the variance of a multiple asset portfolio.
 - C. adjust the beta of a portfolio to take advantage of anticipated market moves.
 - D. select different optimal portfolios on the efficient frontier to match the risk tolerance of each client.

2. An investor has stated that his objective is to build a sizeable investment portfolio to meet his retirement needs in ten years' time. He is looking to invest primarily in shares and he expects returns to be generated by capital gains and reinvestment of the dividends paid into the portfolio. His return objective is best described in terms of:
 - A. total return.
 - B. current income.
 - C. capital appreciation.
 - D. capital preservation.



334 Study Session 12:

1. The Capital Asset Pricing Model says that an investor should:
- A. calculate the unsystematic risk of an asset.
 - B. calculate the variance of a multiple asset portfolio.
 - C. adjust the beta of a portfolio to take advantage of anticipated market moves.
 - D. select different optimal portfolios on the efficient frontier to match the risk tolerance of each client.

Correct Answer: C **LOS: Reading 51-d**

CAPM states that the expected return of an asset or portfolio is a function of its market risk or beta risk.

Reference: CFA® Program Curriculum, Volume 4, pp. 263-267.

2. An investor has stated that his objective is to build a sizeable investment portfolio to meet his retirement needs in ten years' time. He is looking to invest primarily in shares and he expects returns to be generated by capital gains and reinvestment of the dividends paid into the portfolio. His return objective is best described in terms of:

- A. total return.
- B. current income.
- C. capital appreciation.
- D. capital preservation.

Correct Answer: A **LOS: Reading 49-c**

Total return refers to achieving returns through a combination of capital gain and reinvestment of income.

Reference: CFA® Program Curriculum, Volume 4, pp. 206-210.



3. There are two stocks, A and B, in a portfolio and 70% of the portfolio is invested in stock A and 20% in B, the remaining 10% is invested in cash equivalents. The expected return on stock A is 15% and stock B is 12%, cash returns are 5%. The beta of stock A is 1.3 and the beta of stock B is 0.9. The expected return of the portfolio is closest to:

- A. 12.9%.
 - B. 13.4%.
 - C. 15.8%.
 - D. 32.0%.
-

4. When adding an asset to a multi-asset portfolio in order to estimate the standard deviation of the combined portfolio, it is most important to consider:

- A. the standard deviation of the asset's returns.
- B. the average standard deviation of the assets' returns in the portfolio.
- C. the unsystematic risk of each asset and how it will be diversified away in the combined portfolio.
- D. the covariance between the asset's returns and the returns of the other assets in the portfolio.



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3. There are two stocks, A and B, in a portfolio and 70% of the portfolio is invested in stock A and 20% in B, the remaining 10% is invested in cash equivalents. The expected return on stock A is 15% and stock B is 12%, cash returns are 5%. The beta of stock A is 1.3 and the beta of stock B is 0.9. The expected return of the portfolio is closest to:

- A. 12.9%.
- B. 13.4%.
- C. 15.8%.
- D. 32.0%.

Correct Answer: B.....**LOS: Reading 50-c**

The expected return is:

$$(0.7 \times 15\%) + (0.2 \times 12\%) + (0.1 \times 5\%) = 13.4\%$$

Reference: CFA® Program Curriculum, Volume 4, pp. 230-231.

4. When adding an asset to a multi-asset portfolio in order to estimate the standard deviation of the combined portfolio, it is most important to consider:

- A. the standard deviation of the asset's returns.
- B. the average standard deviation of the assets' returns in the portfolio.
- C. the unsystematic risk of each asset and how it will be diversified away in the combined portfolio.
- D. the covariance between the asset's returns and the returns of the other assets in the portfolio.

Correct Answer: D.....**LOS: Reading 50-e**

The components of the formula for portfolio standard deviation are the weighted average (where weights are squared) and the weighted covariances between each pair of assets in the portfolio. Once the number of assets in the portfolio starts to rise the number of covariance terms is significantly larger than the variance terms.

Reference: CFA® Program Curriculum, Volume 4, pp. 238-248.



5. The optimal portfolio for an investor is best described as:
- A. the market portfolio.
 - B. the point where the securities market line is tangent to the efficient frontier.
 - C. the point on the efficient frontier that has the highest return per unit of risk.
 - D. the point where his/her highest utility curve is tangential to the efficient frontier.
-
6. It is least accurate to say that combining two assets in a portfolio will:
- A. diversify some of the risk if the assets are not perfectly correlated.
 - B. provide a return that is the weighted average of the individual returns.
 - C. always reduce the risk of the portfolio to less than the risk of either asset.
 - D. be more effective in reducing risk when the assets have a negative, rather than a positive, correlation.



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5. The optimal portfolio for an investor is best described as:

- A. the market portfolio.
- B. the point where the securities market line is tangent to the efficient frontier.
- C. the point on the efficient frontier that has the highest return per unit of risk.
- D. the point where his/her highest utility curve is tangential to the efficient frontier.

Correct Answer: D.....**LOS: Reading 50-g**

Answers A and B describe the market portfolio which will only be optimal for investors who can tolerate exactly the risk of the market portfolio. Answer C may be a portfolio that is too risky for the investor.

The utility curves represent the trade off between risk and return; the optimal portfolio will be where the highest utility curve touches the efficient frontier.

Reference: CFA® Program Curriculum, Volume 4, pp. 247-248.

6. It is least accurate to say that combining two assets in a portfolio will:

- A. diversify some of the risk if the assets are not perfectly correlated.
- B. provide a return that is the weighted average of the individual returns.
- C. always reduce the risk of the portfolio to less than the risk of either asset.
- D. be more effective in reducing risk when the assets have a negative, rather than a positive, correlation.

Correct Answer: C.....**LOS: Reading 50-e**

C is not correct – the risk will not be reduced to less than either asset unless the correlation is low or negative, e.g. if the correlation is 1 then the risk is the weighted average of the risks of the two assets.

Reference: CFA® Program Curriculum, Volume 4, pp. 238-245.



7. A U.S. investor is a taxpayer with a long investment time horizon. His objective is to maintain the purchasing power of his portfolio. Based on historic data which of the following is likely to represent the most appropriate investment policy?

- A. The portfolio should only be invested in long-term bonds and municipal bonds.
 - B. Common stocks and long-term bonds should make up the largest portion of his portfolio.
 - C. Long-term government bonds and Treasury bills should make up the largest portion of his portfolio.
 - D. The portfolio should be equally divided between common stocks, bonds and Treasury bills.
-

8. Which of the following is usually the most important factor in determining the return generated by an investment portfolio?

- A. Industry selection.
- B. Short-term market-timing.
- C. Long-term asset allocation.
- D. Individual security selection.



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7. A U.S. investor is a taxpayer with a long investment time horizon. His objective is to maintain the purchasing power of his portfolio. Based on historic data which of the following is likely to represent the most appropriate investment policy?

- A. The portfolio should only be invested in long-term bonds and municipal bonds.
- B. Common stocks and long-term bonds should make up the largest portion of his portfolio.
- C. Long-term government bonds and Treasury bills should make up the largest portion of his portfolio.
- D. The portfolio should be equally divided between common stocks, bonds and Treasury bills.

Correct Answer: B.....LOS: Reading 49-c

Common stocks and long-term bonds are both asset classes that have produced after-tax returns that are significantly higher than inflation. Treasury bills are generally not considered attractive for long-term investment since historically they have lost value in real terms.

Reference: CFA® Program Curriculum, Volume 4, pp. 220-223.

8. Which of the following is usually the most important factor in determining the return generated by an investment portfolio?

- A. Industry selection.
- B. Short-term market-timing.
- C. Long-term asset allocation.
- D. Individual security selection.

Correct Answer: C.....LOS: Reading 49-e

Several studies have been done to assess the importance of asset allocation. Studies made in the 1970s through to the 1990s consistently showed that the target asset allocation policy accounts for about 90% of funds' performance. Using time series regression the R squared between fund returns and target asset allocation returns were around 0.90, so for a single fund 90% of the variation in returns is explained by the market return.

Reference: CFA® Program Curriculum, Volume 4, pp. 218 -220.



9. The Security Market Line (SML) relates the expected return on an asset to its:

- A. beta.
- B. variance.
- C. standard deviation.
- D. market capitalization.

10. Which of the following statements is most accurate regarding Markowitz's efficient frontier? It contains the portfolios that have the

- A. maximum rate of return for any given level of beta risk.
- B. minimum rate of return for any given level of beta risk.
- C. maximum rate of return for any given level of standard deviation of returns.
- D. minimum rate of return for any given level of standard deviation of returns.



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9. The Security Market Line (SML) relates the expected return on an asset to its:

- A. beta.
- B. variance.
- C. standard deviation.
- D. market capitalization.

Correct Answer: A **LOS: Reading 51-d**

The Security Market Line (SML) plots the required return from an asset against its systematic or beta risk.

Reference: CFA® Program Curriculum, Volume 4, pp. 263-267.

10. Which of the following statements is most accurate regarding Markowitz's efficient frontier? It contains the portfolios that have the

- A. maximum rate of return for any given level of beta risk.
- B. minimum rate of return for any given level of beta risk.
- C. maximum rate of return for any given level of standard deviation of returns.
- D. minimum rate of return for any given level of standard deviation of returns.

Correct Answer: C **LOS: Reading 50-f**

The efficient frontier plots portfolio returns against total risk as represented by standard deviation. It represents the portfolios that offer the highest return for any given level of risk.

Reference: CFA® Program Curriculum, Volume 4, pp. 247-248.



11. The Capital Market Line:

- A. is an efficient frontier.
- B. is used to estimate the beta of a stock.
- C. is used to compute the covariance between two assets.
- D. reflects the trade off between expected return and beta risk in a market.

12. Studies show that a portfolio investing in 18 randomly selected stocks in the U.S. stock market will diversify away approximately:

- A. 60% of the systematic risk.
- B. 90% of the systematic risk.
- C. 60% of the unsystematic risk.
- D. 90% of the unsystematic risk.



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11. The Capital Market Line:

- A. is an efficient frontier.
- B. is used to estimate the beta of a stock.
- C. is used to compute the covariance between two assets.
- D. reflects the trade off between expected return and beta risk in a market.

Correct Answer: A **LOS: Reading 51-b**

The CML connects the risk-free asset with the market portfolio. It therefore is a set of portfolios offering the highest return for any given level of risk (standard deviation).

Reference: CFA® Program Curriculum, Volume 4, pp. 263-267.

12. Studies show that a portfolio investing in 18 randomly selected stocks in the U.S. stock market will diversify away approximately:

- A. 60% of the systematic risk.
- B. 90% of the systematic risk.
- C. 60% of the unsystematic risk.
- D. 90% of the unsystematic risk.

Correct Answer: D **LOS: Reading 51-c**

Systematic risk cannot be diversified away but unsystematic risk can be largely eliminated with a relatively small number of stocks.

Reference: CFA® Program Curriculum, Volume 4, pp. 259-260.



13. If the standard deviations of returns of two assets are 3.2% and 4.5%, and the covariance between the assets is 6.8, then the correlation coefficient between the returns is closest to:

- A. 0.03.
- B. 0.22.
- C. 0.47.
- D. 2.10.

14. Analysis of portfolio performance shows that:

- A. individual security selection is the largest contributor to performance.
- B. the most important decision is to select the normal long-term asset allocation correctly.
- C. there is no consistent pattern as to whether asset allocation or stock selection is the major contributor to performance.
- D. the decision to move the short-term asset allocation away from the long-term asset allocation policy is the major contributor to performance.



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13. If the standard deviations of returns of two assets are 3.2% and 4.5%, and the covariance between the assets is 6.8, then the correlation coefficient between the returns is closest to:

- A. 0.03.
- B. 0.22.
- C. 0.47.
- D. 2.10.

Correct Answer: C **LOS: Reading 50-d**

$$r_{xy} = \frac{\text{covariance}_{xy}}{\sigma_x \sigma_y} = \frac{6.8}{3.2 \times 4.5} = 0.47$$

Reference: CFA® Program Curriculum, Volume 4, pp. 236-237.

14. Analysis of portfolio performance shows that:

- A. individual security selection is the largest contributor to performance.
- B. the most important decision is to select the normal long-term asset allocation correctly.
- C. there is no consistent pattern as to whether asset allocation or stock selection is the major contributor to performance.
- D. the decision to move the short-term asset allocation away from the long-term asset allocation policy is the major contributor to performance.

Correct Answer: B **LOS: Reading 49-e**

Around 90% of the investment returns come from the long-term asset allocation of the portfolio.

Reference: CFA® Program Curriculum, Volume 4, pp. 218-220.



15. The returns of two assets X and Y have perfect negative correlation. When the two assets are combined in a portfolio, which of the following statements is the most accurate?

- A. The return of the portfolio will always be zero.
 - B. The risk of the portfolio cannot be diversified away.
 - C. The risk/return trade off will always be suboptimal.
 - D. The risk of the portfolio can be completely eliminated.
-

16. If the market risk premium is 4%, the risk-free rate is 6%, and a stock has a beta of 1.1 and standard deviation of 3%, then the expected return from the stock is:

- A. 10.4%.
- B. 11.0%.
- C. 15.0%.
- D. 18.0%.



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15. The returns of two assets X and Y have perfect negative correlation. When the two assets are combined in a portfolio, which of the following statements is the most accurate?

- A. The return of the portfolio will always be zero.
- B. The risk of the portfolio cannot be diversified away.
- C. The risk/return trade off will always be suboptimal.
- D. The risk of the portfolio can be completely eliminated.

Correct Answer: D.....**LOS: Reading 50-e**

The returns of the portfolio will only be zero in a few cases, e.g. the returns of the assets are perfectly inversely related and they are equally weighted, so A is not correct. The risk/return tradeoffs will be optimal on the upper part of the efficient frontier representing all possible combinations of the assets so C is not correct. Risk will be diversified away and can be completely eliminated if the weightings are calculated based on the relative standard deviations of the two assets, so D is correct.

Reference: CFA® Program Curriculum, Volume 4, pp. 232-245.

16. If the market risk premium is 4%, the risk-free rate is 6%, and a stock has a beta of 1.1 and standard deviation of 3%, then the expected return from the stock is:

- A. 10.4%.
- B. 11.0%.
- C. 15.0%.
- D. 18.0%.

Correct Answer: A.....**LOS: Reading 51-d**

Using CAPM, the return:

$$R_x = R_f + \beta[E(R_m) - R_f] = 6\% + (1.1 \times 4\%) = 10.4\%$$

Reference: CFA® Program Curriculum, Volume 4, pp. 263-267.



17. Investors are generally risk-averse means that:

- A. investors prefer not to take on any risk.
- B. there is an inverse relationship between return and risk.
- C. for a given level of return investors prefer a lower risk investment.
- D. investors are willing to take on risk in the short-term but avoid risk in the long-term.

18. If the correlation coefficient between the returns of two assets is 0.8 and the variance of the returns of the two assets is 0.0018 and 0.0026, the covariance of the returns is closest to:

- A. 0.04.
- B. 4.60.
- C. 17.09.
- D. 17.30.



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17. Investors are generally risk-averse means that:

- A. investors prefer not to take on any risk.
- B. there is an inverse relationship between return and risk.
- C. for a given level of return investors prefer a lower risk investment.
- D. investors are willing to take on risk in the short-term but avoid risk in the long-term.

Correct Answer: CLOS: Reading 50-a

Risk aversion simply means that investors wish to be compensated for taking on risk and therefore for a given level of return they prefer a lower risk investment.

Reference: CFA® Program Curriculum, Volume 4, pp. 228-229.

18. If the correlation coefficient between the returns of two assets is 0.8 and the variance of the returns of the two assets is 0.0018 and 0.0026, the covariance of the returns is closest to:

- A. 0.04.
- B. 4.60.
- C. 17.09.
- D. 17.30.

Correct Answer: DLOS: Reading 50-d

$$r_{xy} = \frac{\text{covariance}_{xy}}{\sigma_x \sigma_y}$$

$$\text{cov} = 0.8 \times 4.24 \times 5.1 = 17.30$$

(Remember to take the square root of the variance to get the standard deviation.)

Reference: CFA® Program Curriculum, Volume 4, pp. 236-237.



19. Which of the following is the least appropriate example of an investment constraint that will have an impact on an investor's policy statement?

- A. Time horizon.
 - B. Regulatory factors.
 - C. Liquidity requirements.
 - D. Capital appreciation requirements.
-

20. Which of the following would be a factor that would have a direct impact on an investor's risk tolerance?

- A. His total net worth.
- B. A high rate of income tax.
- C. A preference for ethical investments.
- D. Access to inside information in his job as an investment banker.



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19. Which of the following is the least appropriate example of an investment constraint that will have an impact on an investor's policy statement?

- A. Time horizon.
- B. Regulatory factors.
- C. Liquidity requirements.
- D. Capital appreciation requirements.

Correct Answer: D..... **LOS: Reading 49-d**

Capital appreciation is an objective rather than a constraint.

Reference: CFA® Program Curriculum, Volume 4, pp. 210-216.

20. Which of the following would be a factor that would have a direct impact on an investor's risk tolerance?

- A. His total net worth.
- B. A high rate of income tax.
- C. A preference for ethical investments.
- D. Access to inside information in his job as an investment banker.

Correct Answer: A..... **LOS: Reading 49-b**

B, C and D are all constraints on the way a portfolio of investments would be managed but do not directly affect the risk tolerance of the investor.

Reference: CFA® Program Curriculum, Volume 4, pp. 206-210.



21. Which of the following is least likely to be an assumption of capital market theory?
- A. Investors are averse to buying and selling securities.
 - B. All investors have the same time horizon when they invest.
 - C. There are no transaction costs in buying and selling securities.
 - D. Investors want to invest in portfolios that lie on the efficient frontier.
-
22. The slope of an efficient frontier decreases steadily as an investor moves up the frontier because:
- A. the portfolios become increasingly efficient as you move up the frontier.
 - B. as an investor continues to take on more risk the incremental return diminishes.
 - C. the portfolio representing the top of the frontier is the asset with the lowest risk.
 - D. an investor has to be rewarded for taking on additional risk by being given rapidly increasingly higher returns.



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21. Which of the following is least likely to be an assumption of capital market theory?

- A. Investors are averse to buying and selling securities.
- B. All investors have the same time horizon when they invest.
- C. There are no transaction costs in buying and selling securities.
- D. Investors want to invest in portfolios that lie on the efficient frontier.

Correct Answer: A.....**LOS: Reading 51-a**

It is not assumed that investors are averse to buying and selling securities. It is assumed they will do the transactions required to invest at a point on the efficient frontier.

Reference: CFA® Program Curriculum, Volume 4, pp. 254-255.

22. The slope of an efficient frontier decreases steadily as an investor moves up the frontier because:

- A. the portfolios become increasingly efficient as you move up the frontier.
- B. as an investor continues to take on more risk the incremental return diminishes.
- C. the portfolio representing the top of the frontier is the asset with the lowest risk.
- D. an investor has to be rewarded for taking on additional risk by being given rapidly increasingly higher returns.

Correct Answer: B.....**LOS: Reading 50-f**

Adding equal increments of additional risk (horizontal axis) leads to smaller incremental returns (vertical axis).

Reference: CFA® Program Curriculum, Volume 4, pp. 247-248.



23. Which of the following is least likely to be considered a limitation of the Capital Asset Pricing Model?

- A. It is complicated to apply.
 - B. It considers only systematic risk.
 - C. Estimates of betas are not always accurate.
 - D. It assumes portfolios are sufficiently well diversified to eliminate unsystematic risk.
-

24. An investment manager forecasts that the stock market is going to decline. A client has specified that she wishes to remain invested in the market rather than holding cash. The investment manager is most likely to hold stocks with:

- A. any beta. The beta is irrelevant to the expected return.
- B. betas of less than 1. He expects them to decline by less than the market.
- C. betas of more than 1. They are expected to perform better than the market.
- D. betas of 1. They have no market exposure so will not decline with the market.



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23. Which of the following is least likely to be considered a limitation of the Capital Asset Pricing Model?

- A. It is complicated to apply.
- B. It considers only systematic risk.
- C. Estimates of betas are not always accurate.
- D. It assumes portfolios are sufficiently well diversified to eliminate unsystematic risk.

Correct Answer: A..... **LOS: Reading 51-d**

One of the advantages of CAPM is that it is an easy model to apply.

Reference: CFA® Program Curriculum, Volume 4, pp. 263-271.

24. An investment manager forecasts that the stock market is going to decline. A client has specified that she wishes to remain invested in the market rather than holding cash. The investment manager is most likely to hold stocks with:

- A. any beta. The beta is irrelevant to the expected return.
- B. betas of less than 1. He expects them to decline by less than the market.
- C. betas of more than 1. They are expected to perform better than the market.
- D. betas of 1. They have no market exposure so will not decline with the market.

Correct Answer: B..... **LOS: Reading 51-d**

A beta of less than 1 means the stocks are defensive and will decline by less than the market. This can be seen from CAPM:

$$R_x = R_f + \beta[E(R_m) - R_f]$$

Reference: CFA® Program Curriculum, Volume 4, pp. 263-267.



25. A point on the Capital Market Line represents a portfolio that has a higher expected return than the market portfolio. This portfolio:

- A. cannot exist.
- B. is leveraged.
- C. includes a risk-free asset.
- D. is invested in a different mix of equities to that in the market portfolio.

26. Which of the following is least likely to be part of the portfolio management process?

- A. Constructing the portfolio.
- B. Evaluating investment performance.
- C. Constructing a client policy statement
- D. Advertising the manager's performance record.



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25. A point on the Capital Market Line represents a portfolio that has a higher expected return than the market portfolio. This portfolio:

- A. cannot exist.
- B. is leveraged.
- C. includes a risk-free asset.
- D. is invested in a different mix of equities to that in the market portfolio.

Correct Answer: B..... LOS: Reading 51-b

The portfolio represents an investor who has borrowed at the risk-free rate and invested all the funds in the market portfolio.

Reference: CFA® Program Curriculum, Volume 4, pp. 256-262.

26. Which of the following is least likely to be part of the portfolio management process?

- A. Constructing the portfolio.
- B. Evaluating investment performance.
- C. Constructing a client policy statement
- D. Advertising the manager's performance record.

Correct Answer: D..... LOS: Reading 49-a

The portfolio management process consists of four steps: construct the policy statement, forecast future economic and market trends, construct the portfolio and the continual monitoring and evaluation of performance.

Reference: CFA® Program Curriculum, Volume 4, pp. 202-203.



27. In capital market theory, systematic risk is:

- A. total risk.
- B. unique risk.
- C. market risk.
- D. diversifiable risk.

28. An individual who is working and in her late twenties is likely to be:

- A. in the spending phase of her investment life cycle and investing in low-risk assets.
- B. in the consolidation phase of her investment life cycle and investing in moderate-risk assets.
- C. in the consolidation phase of her investment life cycle and investing in relatively high-risk assets.
- D. in the accumulation phase of her investment life cycle and investing in relatively high-risk assets.



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27. In capital market theory, systematic risk is:

- A. total risk.
- B. unique risk.
- C. market risk.
- D. diversifiable risk.

Correct Answer: CLOS: Reading 51-c

B and D refer to unsystematic risk and A includes systematic and unsystematic risk.

Reference: CFA® Program Curriculum, Volume 4, pp. 259-260.



28. An individual who is working and in her late twenties is likely to be:
- A. in the spending phase of her investment life cycle and investing in low-risk assets.
 - B. in the consolidation phase of her investment life cycle and investing in moderate-risk assets.
 - C. in the consolidation phase of her investment life cycle and investing in relatively high-risk assets.
 - D. in the accumulation phase of her investment life cycle and investing in relatively high-risk assets.

Correct Answer: D **LOS: Reading 49-b**

In the accumulation phase, individuals are accumulating assets to meet current requirements as well as longer-term goals. Although their asset base may be relatively small they have a long time horizon and future earning ability so they can invest in relatively high-risk assets.

Reference: CFA® Program Curriculum, Volume 4, pp. 198-202.



Study Session 13: Equity Investments: Securities Markets

This study session addresses how securities are bought and sold and what constitutes a well-functioning securities market. The reading on market indexes gives an understanding of how indexes are constructed and calculated and the biases inherent in each of the weighting schemes used.

Some of the most interesting and important work in the investment field during the past several decades revolves around the efficient market hypothesis (EMH) and its implications for active versus passive equity portfolio management. The readings on this subject provide an understanding of the EMH and the seemingly persistent anomalies to the theory, an understanding that is necessary to judge the value of fundamental or technical security analysis.

Reading 52: Organization and Functioning of Securities Markets

Reading 53: Security-Market Indexes

Reading 54: Efficient Capital Markets

Reading 55: Market Efficiency and Anomalies



1. If a market is internally efficient it means that:
 - A. transaction costs are minimal.
 - B. stock prices reflect all security price information.
 - C. stock prices reflect all information from public and private sources.
 - D. investors direct money to the companies that can make the best use of the funds.
-

2. In the primary market Treasury bonds are sold:
 - A. by private placement.
 - B. by Federal Reserve auction.
 - C. by a negotiated agreement with an investment bank.
 - D. on a best efforts basis by a consortium of investment banks.



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1. If a market is internally efficient it means that:

- A. transaction costs are minimal.
- B. stock prices reflect all security price information.
- C. stock prices reflect all information from public and private sources.
- D. investors direct money to the companies that can make the best use of the funds.

Correct Answer: A **LOS: Reading 52-a**

B and C refer to the weak and strong forms of the efficient market hypothesis respectively and D refers to allocative efficiency. Internally efficient simply means transaction costs are minimized.

Reference: CFA® Program Curriculum, Volume 5, pp. 6-8.

2. In the primary market Treasury bonds are sold:

- A. by private placement.
- B. by Federal Reserve auction.
- C. by a negotiated agreement with an investment bank.
- D. on a best efforts basis by a consortium of investment banks.

Correct Answer: C **LOS: Reading 52-b**

Treasury bonds (and notes and bills) are all sold through Federal Reserve auctions.

Reference: CFA® Program Curriculum, Volume 5, pp. 8-9.



3. Value Line indexes are calculated as follows:

Weighting of constituent stocks	Holding period returns
A. unweighted	arithmetic mean
B. unweighted	geometric mean
C. price-weighted	arithmetic mean
D. price-weighted	geometric mean

4. In a continuous dealer market:

- A. the market is open for 24 hours a day with market makers providing liquidity.
- B. there are always dealers available when the market is open who are willing to make a market in a stock.
- C. there is sufficient liquidity to assume that dealers who are submitting bid and ask prices will be able to deal.
- D. all the bids and asks for a stock are continuously monitored to arrive at a price at which transactions are done.



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3. Value Line indexes are calculated as follows:

	Weighting of constituent stocks	Holding period returns
A.	unweighted	arithmetic mean
B.	unweighted	geometric mean
C.	price-weighted	arithmetic mean
D.	price-weighted	geometric mean

Correct Answer: B.....**LOS: Reading 53-a**

Value Line uses a geometric average of holding period returns to compute an unweighted index. Each stock therefore has an equal weight in the index and note that the geometric mean calculation gives it a downward bias compared to an arithmetic mean being used.

Reference: CFA® Program Curriculum, Volume 5, pp. 45-46.

4. In a continuous dealer market:

- A. the market is open for 24 hours a day with market makers providing liquidity.
- B. there are always dealers available when the market is open who are willing to make a market in a stock.
- C. there is sufficient liquidity to assume that dealers who are submitting bid and ask prices will be able to deal.
- D. all the bids and asks for a stock are continuously monitored to arrive at a price at which transactions are done.

Correct Answer: B.....**LOS: Reading 52-c**

A continuous market only needs to be liquid during its opening hours, it is not necessary for trading to be open for 24 hours so A is not correct.

C refers to a continuous auction market.

D is not correct, it is in a call market that all the bids and asks for a stock are monitored to arrive at a price at which transactions are done at a specific time.

Reference: CFA® Program Curriculum, Volume 5, pp. 13-15.



5. Which of the following is least likely to make the computation of bond market indexes more complex than stock market indexes in the U.S.?

- A. Difficulties in establishing prices for bonds.
 - B. The universe of bonds is much wider than the stock universe.
 - C. The universe of bonds is constantly changing due to the volume of new issues and bonds reaching maturity.
 - D. Investors receive a higher percentage of their return from coupon income from bonds than they receive from dividends with equities.
-

6. The third market refers to:

- A. a regional exchange.
- B. a continuous auction market.
- C. direct trading between two institutions.
- D. over-the-counter trading of shares which are listed on an exchange.



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5. Which of the following is least likely to make the computation of bond market indexes more complex than stock market indexes in the U.S.?

- A. Difficulties in establishing prices for bonds.
- B. The universe of bonds is much wider than the stock universe.
- C. The universe of bonds is constantly changing due to the volume of new issues and bonds reaching maturity.
- D. Investors receive a higher percentage of their return from coupon income from bonds than they receive from dividends with equities.

Correct Answer: D..... **LOS: Reading 53-b**

All of the first three points are true plus there is also the issue of the change in volatility of bond indexes as durations are constantly changing. D is not a factor that would make the computation of the index more complex, either the index would include reinvestment of income or it would not.

Reference: CFA® Program Curriculum, Volume 5, pp. 52-53.

6. The third market refers to:

- A. a regional exchange.
- B. a continuous auction market.
- C. direct trading between two institutions.
- D. over-the-counter trading of shares which are listed on an exchange.

Correct Answer: D..... **LOS: Reading 52-d**

The third market refers to trading outside an exchange so A is not correct.

The third market refers to the location of the trading rather than the trading system so B is not correct.

Direct trading without the use of a broker is the fourth market so C is not correct.

The third market is over-the-counter trading of shares which are listed on an exchange.

Reference: CFA® Program Curriculum, Volume 5, p. 23.



7. If the performance of the Merrill Lynch-Wilshire Capital Markets Index was substantially higher than the Merrill Lynch Investment-Grade Bond Index over the same period this is most likely to be explained by:

- A. U.S. Treasury bonds performed better than U.S. corporate bonds.
 - B. U.S. mortgage bonds performed better than U.S. corporate bonds.
 - C. the U.S. stock market performed better than the U.S. bond market.
 - D. international stock markets performed on average better than the U.S. stock market.
-

8. If an investor buys a stock that is trading at \$150 on margin and the percent margin is 25% then the leverage factor is:

- A. 0.25.
- B. 4.00.
- C. 6.00.
- D. 37.50.



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7. If the performance of the Merrill Lynch-Wilshire Capital Markets Index was substantially higher than the Merrill Lynch Investment-Grade Bond Index over the same period this is most likely to be explained by:

- A. U.S. Treasury bonds performed better than U.S. corporate bonds.
- B. U.S. mortgage bonds performed better than U.S. corporate bonds.
- C. the U.S. stock market performed better than the U.S. bond market.
- D. international stock markets performed on average better than the U.S. stock market.

Correct Answer: C **LOS: Reading 53-b**

The Merrill Lynch-Wilshire Capital Markets Index is a combination of U.S. fixed income instruments and U.S. equities, therefore the outperformance of this index against the Merrill Lynch bond index is likely to be because equity markets provided superior returns to bonds.

Reference: CFA® Program Curriculum, Volume 5, pp. 53-56.

8. If an investor buys a stock that is trading at \$150 on margin and the percent margin is 25% then the leverage factor is:

- A. 0.25.
- B. 4.00.
- C. 6.00.
- D. 37.50.

Correct Answer: B..... **LOS: Reading 52-g**

The leverage factor is $1/(\text{percent margin})$ which is $1/0.25 = 4$

Reference: CFA® Program Curriculum, Volume 5, pp. 26-29.



9. In the U.S. a person who quotes bid and ask prices for a stock is called a:
- A. specialist.
 - B. floor broker.
 - C. registered trader.
 - D. commission broker.
-

10. The cost of information explains why:
- A. markets are not completely efficient.
 - B. there tends to be an upward bias to prices.
 - C. arbitrageurs cannot exploit pricing anomalies.
 - D. new information is reflected immediately in stock prices.



372 Study Session 13:

9. In the U.S. a person who quotes bid and ask prices for a stock is called a:

- A. specialist.
- B. floor broker.
- C. registered trader.
- D. commission broker.

Correct Answer: A **LOS: Reading 52-e**

A specialist makes markets in stocks. They also act as brokers and match buy and sell orders.

Reference: CFA® Program Curriculum, Volume 5, pp. 29-31.

10. The cost of information explains why:

- A. markets are not completely efficient.
- B. there tends to be an upward bias to prices.
- C. arbitrageurs cannot exploit pricing anomalies.
- D. new information is reflected immediately in stock prices.

Correct Answer: A **LOS: Reading 55-a**

The cost of information is one of the reasons why markets cannot be completely efficient; there must be some reward for analyzing or sourcing new information to justify the cost.

Reference: CFA® Program Curriculum, Volume 5, pp. 97-98.



11. We should be skeptical of any claims by institutional fund managers to have found a pricing anomaly because:

- A. there are biases in the way stock trading strategies are researched.
 - B. markets are highly efficient so anomalies will only persist for very short periods.
 - C. movements in stock prices that differ from expected moves are always random.
 - D. most anomalies are exploited by individual investors and not institutional fund managers.
-

12. An investor buys 1,000 shares priced at \$100 on margin and the initial margin required is 40%. If the maintenance margin is 30% the investor will have to pay the first margin call if the share price falls below:

- A. \$70.00.
- B. \$85.71.
- C. \$90.00.
- D. \$99.99.



374 Study Session 13:

11. We should be skeptical of any claims by institutional fund managers to have found a pricing anomaly because:

- A. there are biases in the way stock trading strategies are researched.
- B. markets are highly efficient so anomalies will only persist for very short periods.
- C. movements in stock prices that differ from expected moves are always random.
- D. most anomalies are exploited by individual investors and not institutional fund managers.

Correct Answer: A..... **LOS: Reading 55-d**

Research that 'discovers' trading anomalies is often subject to survivorship bias, selection bias or small sample bias.

Reference: CFA® Program Curriculum, Volume 5, pp. 100-104.

12. An investor buys 1,000 shares priced at \$100 on margin and the initial margin required is 40%. If the maintenance margin is 30% the investor will have to pay the first margin call if the share price falls below:

- A. \$70.00.
- B. \$85.71.
- C. \$90.00.
- D. \$99.99.

Correct Answer: B..... **LOS: Reading 52-g**

The initial margin requirement of 40% allows the investor to borrow 60%, or \$60,000 of the \$100,000 cost of the shares. If the price of the shares moves to P the value of the equity is $1,000P - \$60,000$. This must equal 30% of $1,000P$. This gives:

$$1,000P - \$60,000 = 300P \text{ or } P = \$85.71$$

Reference: CFA® Program Curriculum, Volume 5, pp. 26-29.



13. Specialists are expected to:

- A. attempt to stop stock prices rising and falling.
 - B. sell stock from their own inventory when the market for a stock is declining.
 - C. buy and sell against the market when a stock is moving clearly in one direction.
 - D. widen the bid-ask spread for a stock when there is excessive volatility in the stock price movement.
-

14. The Dow Jones Industrial Average:

- A. is a price-weighted index and automatically adjusts for a stock split by leaving the security weighting unchanged.
- B. is a value-weighted index and automatically adjusts for a stock split by leaving the security weighting unchanged.
- C. is a value-weighted index and has a downward bias since when there is a stock split of a constituent security the security weighting in the index will be reduced.
- D. is a price-weighted index and has a downward bias since when there is a stock split of a constituent security the security weighting in the index will be reduced.



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13. Specialists are expected to:

- A. attempt to stop stock prices rising and falling.
- B. sell stock from their own inventory when the market for a stock is declining.
- C. buy and sell against the market when a stock is moving clearly in one direction.
- D. widen the bid-ask spread for a stock when there is excessive volatility in the stock price movement.

Correct Answer: C**LOS: Reading 52-e**

The obligation of a market maker is to ensure a fair and orderly market for shares by providing reasonable liquidity. This would involve narrowing the spread for an illiquid stock, buying stock for their own inventory if the stock price is declining and visa versa if the stock price is rising, i.e. buying and selling against the market when shares are moving in one direction. Although this may dampen stock price moves there is not the expectation that specialists will try to stop stock prices moving.

Reference: CFA® Program Curriculum, Volume 5, pp. 29-31.

14. The Dow Jones Industrial Average:

- A. is a price-weighted index and automatically adjusts for a stock split by leaving the security weighting unchanged.
- B. is a value-weighted index and automatically adjusts for a stock split by leaving the security weighting unchanged.
- C. is a value-weighted index and has a downward bias since when there is a stock split of a constituent security the security weighting in the index will be reduced.
- D. is a price-weighted index and has a downward bias since when there is a stock split of a constituent security the security weighting in the index will be reduced.

Correct Answer: D**LOS: Reading 53-a**

The Dow Jones Industrial Average is the price-weighted average of the 30 constituent stocks. It is computed by taking the sum of the prices of the stocks and dividing by a divisor that adjusts to take account of stock splits, so the index value is not altered by a stock split. However when a company does a stock split leading to a fall in the price, the weighting of the stock in the index will thereafter be smaller. Since more successful companies have, on average, rising share prices which lead to them having more stock splits this leads to their weighting being repeatedly reduced creating a downward bias in the index.

Reference: CFA® Program Curriculum, Volume 5, pp. 42-43.



15. An underwriter of a bond issue, if it is a negotiated bid, is least likely to do which of the following?

- A. Origination.
 - B. Distribute the bonds to investors.
 - C. Acquire the bonds from the issuer.
 - D. Return the unsold portion of bonds to the issuer.
-

16. There are three shares, A, B and C in a price-weighted index and the following information is given:

	Share price	Number of shares
A	\$50	100,000
B	\$100	40,000
C	\$75	10,000

If the share price of A doubles and the share prices of B and C remain unchanged then the index will rise by:

- A. 22.22%.
- B. 33.33%.
- C. 44.44%.
- D. 51.28%.



378 Study Session 13:

15. An underwriter of a bond issue, if it is a negotiated bid, is least likely to do which of the following?

- A. Origination.
- B. Distribute the bonds to investors.
- C. Acquire the bonds from the issuer.
- D. Return the unsold portion of bonds to the issuer.

Correct Answer: D..... **LOS: Reading 52-b**

In a negotiated bid, the underwriter will take on the risk of selling the bonds at a price equal to, or higher than, the price paid to the issuer. Any unsold bonds will remain on the underwriter's book.

Reference: CFA® Program Curriculum, Volume 5, p. 9.

16. There are three shares, A, B and C in a price-weighted index and the following information is given:

	Share price	Number of shares
A	\$50	100,000
B	\$100	40,000
C	\$75	10,000

If the share price of A doubles and the share prices of B and C remain unchanged then the index will rise by:

- A. 22.22%.
- B. 33.33%.
- C. 44.44%.
- D. 51.28%.

Correct Answer: A..... **LOS: Reading 53-a**

Assume that the initial index is the sum of the prices = $\$50 + \$100 + \$75 = \225

If A doubles the index = $\$100 + \$100 + \$75 = \275 , an increase of 22.22%.

Reference: CFA® Program Curriculum, Volume 5, pp. 42-44.



17. The geometric mean of the holding period returns of the constituents of an index are used, rather than the arithmetic mean, to compute an index level. If an investor replicates the index by holding the shares in the same weighting as they are represented in the index:

- A. he will see the value of the shares move exactly in line with the index.
 - B. he will see the value of the shares increase by less than the index in a rising market.
 - C. he will see the value of the shares increase by more than the index in a rising market.
 - D. whether the value of the shares increases by more or less than the index will depend on whether it is a price-weighted or unweighted index.
-

18. In Japan, if the share price of a company with a small market capitalization, that is in both the Nikkei Dow Jones Index and the TOPIX index, rises sharply then:

- A. there is insufficient information to determine which index will rise the most.
- B. the TOPIX will rise by more than the Nikkei-Dow Jones Average index since the Nikkei is a price-weighted index.
- C. the TOPIX will rise by more than the Nikkei-Dow Jones Average index since the Nikkei is a market-weighted index.
- D. the Nikkei-Dow Jones Average index will rise by more than the TOPIX index since the Nikkei is a price-weighted index.



380 Study Session 13:

17. The geometric mean of the holding period returns of the constituents of an index are used, rather than the arithmetic mean, to compute an index level. If an investor replicates the index by holding the shares in the same weighting as they are represented in the index:

- A. he will see the value of the shares move exactly in line with the index.
- B. he will see the value of the shares increase by less than the index in a rising market.
- C. he will see the value of the shares increase by more than the index in a rising market.
- D. whether the value of the shares increases by more or less than the index will depend on whether it is a price-weighted or unweighted index.

Correct Answer: C **LOS: Reading 53-a**

In all types of index the geometric mean will be less than the arithmetic mean (unless each share moves by an identical amount in each time period) in a rising market.

Reference: CFA® Program Curriculum, Volume 5, pp. 45-46.

18. In Japan, if the share price of a company with a small market capitalization, that is in both the Nikkei Dow Jones Index and the TOPIX index, rises sharply then:

- A. there is insufficient information to determine which index will rise the most.
- B. the TOPIX will rise by more than the Nikkei-Dow Jones Average index since the Nikkei is a price-weighted index.
- C. the TOPIX will rise by more than the Nikkei-Dow Jones Average index since the Nikkei is a market-weighted index.
- D. the Nikkei-Dow Jones Average index will rise by more than the TOPIX index since the Nikkei is a price-weighted index.

Correct Answer: A **LOS: Reading 53-a**

Unless we know the Yen price relative to the market capitalization of the company's stock we cannot calculate which index will rise the most. The Nikkei is a price-weighted index and the TOPIX is a market-weighted index.

Reference: CFA® Program Curriculum, Volume 5, pp. 42-44.



19. Which of the following statements regarding NASDAQ is least accurate?
- A. Dealers are obligated to execute transactions at the prices shown on the NASDAQ system.
 - B. As long as a registered dealer is willing to make a market in a stock it can be dealt on NASDAQ.
 - C. A broker can access the bid and ask quotes for a stock from various dealers on the NASDAQ system.
 - D. Dealers are free to make markets on as many or as few OTC stocks as they wish on the NASDAQ system.
-

20. Security-market indexes are least likely to be used for:
- A. constructing index funds.
 - B. computing total risk of portfolios.
 - C. benchmarks, to measure the performance of portfolios.
 - D. predicting future stock market movements by technical analysts.



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19. Which of the following statements regarding NASDAQ is least accurate?

- A. Dealers are obligated to execute transactions at the prices shown on the NASDAQ system.
- B. As long as a registered dealer is willing to make a market in a stock it can be dealt on NASDAQ.
- C. A broker can access the bid and ask quotes for a stock from various dealers on the NASDAQ system.
- D. Dealers are free to make markets on as many or as few OTC stocks as they wish on the NASDAQ system.

Correct Answer: A **LOS: Reading 52-d**

A broker will call a dealer who is showing the most attractive prices on the screen and verify the price; at that point the trade could be executed.

Reference: CFA® Program Curriculum, Volume 5, pp. 20-22.

20. Security-market indexes are least likely to be used for:

- A. constructing index funds.
- B. computing total risk of portfolios.
- C. benchmarks, to measure the performance of portfolios.
- D. predicting future stock market movements by technical analysts.

Correct Answer: B **LOS: Reading 53-a**

Index performance is used to compute systematic or market risk of portfolios.

Reference: CFA® Program Curriculum, Volume 5, pp. 40-41.

Reference: CFA® Program Curriculum, Volume 5, pp. 52-53.



21. If there are the same constituent stocks included in a price-weighted index and a value-weighted index and the price-weighted index performs better than the value-weighted index it could be explained by:

- A. there were a large number of stock splits.
 - B. there were a small number of stock splits.
 - C. high-priced stocks generally performed better than low-priced stocks.
 - D. low-priced stocks generally performed better than high-priced stocks.
-

22. The U.S. over-the-counter market refers to trading in shares that:

- A. are not listed on an exchange.
- B. may or may not be listed on an exchange.
- C. are quoted on the NASDAQ National Market System.
- D. are not quoted on either the NASDAQ National Market System or an exchange.



384 Study Session 13:

21. If there are the same constituent stocks included in a price-weighted index and a value-weighted index and the price-weighted index performs better than the value-weighted index it could be explained by:

- A. there were a large number of stock splits.
- B. there were a small number of stock splits.
- C. high-priced stocks generally performed better than low-priced stocks.
- D. low-priced stocks generally performed better than high-priced stocks.

Correct Answer: C **LOS: Reading 53-a**

Stock splits, since they are more commonly done by successful companies, will tend to have a downward bias on the price-weighted index. High priced stocks are more heavily weighted in the price-weighted index so if they perform well it will lead to the price-weighted index outperforming the value-weighted index.

Reference: CFA® Program Curriculum, Volume 5, pp. 42-45.

22. The U.S. over-the-counter market refers to trading in shares that:

- A. are not listed on an exchange.
- B. may or may not be listed on an exchange.
- C. are quoted on the NASDAQ National Market System.
- D. are not quoted on either the NASDAQ National Market System or an exchange.

Correct Answer: B..... **LOS: Reading 52-d**

The OTC market includes the trading of all shares that are not listed on an exchange and also includes the third market, which is trading listed shares outside an exchange. This includes shares traded on the NASDAQ National Market System (NMS), on the NASDAQ system outside NMS and outside NASDAQ.

Reference: CFA® Program Curriculum, Volume 5, pp. 20-23.



23. An order to sell shares in ABC at \$100 when the current price is \$95 is an example of a:

- A. limit order.
 - B. floor order.
 - C. market order.
 - D. stop loss order.
-

24. The analysis of the performance of professional money managers:

- A. supports the strong-form of the Efficient Market Hypothesis.
- B. does not support the weak-form of the Efficient Market Hypothesis.
- C. does not support the strong-form of the Efficient Market Hypothesis.
- D. does not support the semistrong-form of the Efficient Market Hypothesis.



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23. An order to sell shares in ABC at \$100 when the current price is \$95 is an example of a:

- A. limit order.
- B. floor order.
- C. market order.
- D. stop loss order.

Correct Answer: A **LOS: Reading 52-e**

A limit order specifies the buy or sell price.

Reference: CFA® Program Curriculum, Volume 5, p. 25.

24. The analysis of the performance of professional money managers:

- A. supports the strong-form of the Efficient Market Hypothesis.
- B. does not support the weak-form of the Efficient Market Hypothesis.
- C. does not support the strong-form of the Efficient Market Hypothesis.
- D. does not support the semistrong-form of the Efficient Market Hypothesis.

Correct Answer: A **LOS: Reading 54-a**

The majority of money managers cannot consistently outperform a buy-and-hold strategy over long time periods. This supports the findings of the strong-form of the Efficient Market Hypothesis.

Reference: CFA® Program Curriculum, Volume 5, pp. 81-83.



25. When a new issue of bonds is sold by an institution to raise funds this will be done in the:

- A. third market.
- B. fourth market.
- C. primary market.
- D. secondary market.

26. An index calculated using the freely floating shares is most likely to be:

- | Index construction | Shares included |
|-------------------------|---|
| A. price-weighted index | authorized shares |
| B. price-weighted index | fully paid-up shares |
| C. value-weighted index | shares held by independent investors |
| D. value-weighted index | shares traded in the last twelve months |



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25. When a new issue of bonds is sold by an institution to raise funds this will be done in the:

- A. third market.
- B. fourth market.
- C. primary market.
- D. secondary market.

Correct Answer: C **LOS: Reading 52-b**

The secondary market is where trading takes place in issues that have already been sold to the public. The third market is where trading takes place in the over the counter market of a listed security and the fourth market is where trading takes place directly between two investors without a broker acting as intermediary.

The primary market is where new issues are sold to investors.

Reference: CFA® Program Curriculum, Volume 5, pp. 12-24.

26. An index calculated using the freely floating shares is most likely to be:

- | | Index construction | Shares included |
|----|----------------------|---|
| A. | price-weighted index | authorized shares |
| B. | price-weighted index | fully paid-up shares |
| C. | value-weighted index | shares held by independent investors |
| D. | value-weighted index | shares traded in the last twelve months |

Correct Answer: C **LOS: Reading 53-a**

It is only a value-weighted, not price-weighted index, which is affected by the number of shares included in the calculation. The shares in the free float are the ones that are held independently, and not by insiders. Insiders are likely to be long term investors, so their shares are not available for trading in the market.

Reference: CFA® Program Curriculum, Volume 5, p. 44.



27. Which of the following statements regarding the Dow Jones Industrial Average (DJIA) is least accurate?

- A. The daily performance of the index is similar to other New York Stock Exchange indexes.
 - B. The DJIA is an unweighted index and therefore each of the 30 stocks carries an equal weight.
 - C. The long-term performance of the index is not comparable to other New York Stock Exchange indexes.
 - D. Since the DJIA only includes 30 stocks it will only represent the performance of the larger, mature companies listed on the New York Stock Exchange.
-

28. A bond market index is most likely to be constructed as:

- A. an unweighted total return index.
- B. an unweighted capital-only index.
- C. a price-weighted capital-only index.
- D. a market-weighted total return index.



390 Study Session 13:

27. Which of the following statements regarding the Dow Jones Industrial Average (DJIA) is least accurate?

- A. The daily performance of the index is similar to other New York Stock Exchange indexes.
- B. The DJIA is an unweighted index and therefore each of the 30 stocks carries an equal weight.
- C. The long-term performance of the index is not comparable to other New York Stock Exchange indexes.
- D. Since the DJIA only includes 30 stocks it will only represent the performance of the larger, mature companies listed on the New York Stock Exchange.

Correct Answer: B.....LOS: Reading 53-a

The DJIA is a price-weighted index and it is the arithmetic average of the prices of the shares in the index, i.e. a high-priced share will have a larger influence on the index than a low priced share. The other NYSE indexes are value-weighted. Although on a daily basis the difference in moves between the indexes is small, over the long term the indexes are not comparable.

Reference: CFA® Program Curriculum, Volume 5, pp. 42-43.



28. A bond market index is most likely to be constructed as:

- A. an unweighted total return index.
- B. an unweighted capital-only index.
- C. a price-weighted capital-only index.
- D. a market-weighted total return index.

Correct Answer: D **LOS: Reading 53-b**

A bond market index is usually constructed based on the market value of the issues and the capital gain plus income are included.

Reference: CFA® Program Curriculum, Volume 5, pp. 52-53.



Study Session 14: Equity Investments: Industry and Company Analysis

This study session focuses on industry and company analysis and describes the tools used in forming an opinion about investing in a particular stock or group of stocks.

This study session begins with the essential tools of equity valuation: the discounted cash flow technique and the relative valuation approach. These techniques provide the means to estimate reasonable price for a stock. The readings on industry analysis are an important element in the valuation process, providing the top-down context crucial to estimating a company's potential. Also addressed is estimating a company's earnings per share by forecasting sales and profit margins.

The last reading in this study session focuses on price multiples, one of the most familiar and widely used tools in estimating the value of a company, and introduces the application of four commonly used price multiples to valuation.

Reading 56: An Introduction to Security Valuation: Part I

Reading 57: Industry Analysis

Reading 58: Equity: Concepts and Techniques

Reading 59: Company Analysis and Stock Valuation

Reading 60: An Introduction to Security Valuation: Part II

Reading 61: Introduction to Price Multiples



1. The required rate of return of an investor buying an asset is least likely to depend on the:
 - A. expected rate of inflation.
 - B. risk premium of the asset.
 - C. real risk-free rate of the economy.
 - D. growth rate of the asset's earnings.
-
2. An industry has a Herfindahl index of 0.05. Which of the following statements might explain this?
 - A. The industry is an oligopoly.
 - B. The industry is dominated by one firm.
 - C. The industry has very few participants, each with an approximately equal market share.
 - D. The industry has a large number of participants with no single firm holding a large market share.



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1. The required rate of return of an investor buying an asset is least likely to depend on the:
- A. expected rate of inflation.
 - B. risk premium of the asset.
 - C. real risk-free rate of the economy.
 - D. growth rate of the asset's earnings.

Correct Answer: D..... **LOS: Reading 60-d**

The required rate of return depends on three factors: the real risk-free rate, the expected inflation rate and a risk premium.

Reference: CFA® Program Curriculum, Volume 5, pp. 191-193.

2. An industry has a Herfindahl index of 0.05. Which of the following statements might explain this?
- A. The industry is an oligopoly.
 - B. The industry is dominated by one firm.
 - C. The industry has very few participants, each with an approximately equal market share.
 - D. The industry has a large number of participants with no single firm holding a large market share.

Correct Answer: D..... **LOS: Reading 58-e**

A Herfindahl index of 0.05 indicates low concentration in the industry. For example if there were 20 firms with equal market shares the Herfindahl index would be 0.05.

Reference: CFA® Program Curriculum, Volume 5, pp. 138-140.



3. When economies move from being industrially based to service based this could be most appropriately described as:

- A. a business cycle.
- B. value chain competition.
- C. cyclical economic change.
- D. structural economic change.

4. Which of the following is most likely to lead to estimated earnings per share for a stock being lower than in the previous period?

- A. Tax rates are declining.
- B. Industry sales are rising.
- C. Unit labor costs are rising.
- D. Capacity utilization rates are increasing.



396 Study Session 14:

3. When economies move from being industrially based to service based this could be most appropriately described as:

- A. a business cycle.
- B. value chain competition.
- C. cyclical economic change.
- D. structural economic change.

Correct Answer: D..... **LOS: Reading 57**

A structural economic change is when an economy goes through a major change in the way it functions. A move from an industry-based to a service-based economy is an example of this. Business or economic cycles are shorter term ups and downs in economic activity.

Reference: CFA® Program Curriculum, Volume 5, pp. 125-127.

4. Which of the following is most likely to lead to estimated earnings per share for a stock being lower than in the previous period?

- A. Tax rates are declining.
- B. Industry sales are rising.
- C. Unit labor costs are rising.
- D. Capacity utilization rates are increasing.

Correct Answer: C **LOS: Reading 59-b**

Higher unit labor costs will depress operating margins. The other factors will tend to increase earnings per share.

Reference: CFA® Program Curriculum, Volume 5, pp. 152-156.



5. The major difference between portfolio managers who follow the top-down rather than the bottom-up approach to stock valuation is that:

- A. they are stock pickers.
 - B. they focus on selecting stocks that will outperform the market regardless of the market outlook.
 - C. they focus on selecting stocks that will outperform the market regardless of the industry outlook.
 - D. they place emphasis on the market and industry outlook in determining stocks' performance.
-

6. Estimating the earnings per share for a firm's stock is least likely to involve analyzing which of the following?

- A. The firm's earnings multiplier.
- B. The firm's competitive strategy.
- C. The firm's operating profit margins.
- D. The firm's sales growth relative to its industry.



398 Study Session 14:

5. The major difference between portfolio managers who follow the top-down rather than the bottom-up approach to stock valuation is that:

- A. they are stock pickers.
- B. they focus on selecting stocks that will outperform the market regardless of the market outlook.
- C. they focus on selecting stocks that will outperform the market regardless of the industry outlook.
- D. they place emphasis on the market and industry outlook in determining stocks' performance.

Correct Answer: D..... **LOS: Reading 56**

A, B and C refer to bottom-up portfolio managers. A top-down portfolio manager will look at market factors first, then industry factors and finally individual securities.

Reference: CFA® Program Curriculum, Volume 5, pp. 117-121.

6. Estimating the earnings per share for a firm's stock is least likely to involve analyzing which of the following?

- A. The firm's earnings multiplier.
- B. The firm's competitive strategy.
- C. The firm's operating profit margins.
- D. The firm's sales growth relative to its industry.

Correct Answer: A..... **LOS: Reading 59-b**

The earnings multiplier (P/E) multiplied by the earnings per share estimate will give the expected stock price.

Reference: CFA® Program Curriculum, Volume 5, pp. 152-156.



7. A company's current stock price is \$3.20, the estimated earnings per share are \$0.24, the dividend payout ratio is 35%, and the estimated P/E ratio in one year's time is 15. The expected rate of return from the stock over the next year is closest to:

- A. 12.5%.
 - B. 15.1%.
 - C. 20.0%.
 - D. 25.3%.
-

8. If the real risk-free rate of return is 2% and the expected inflation rate is 5%, then the nominal risk-free rate is closest to:

- A. 1.0%.
- B. 2.5%.
- C. 2.9%.
- D. 7.1%.



400 Study Session 14:

7. A company's current stock price is \$3.20, the estimated earnings per share are \$0.24, the dividend payout ratio is 35%, and the estimated P/E ratio in one year's time is 15. The expected rate of return from the stock over the next year is closest to:

- A. 12.5%.
- B. 15.1%.
- C. 20.0%.
- D. 25.3%.

Correct Answer: B..... LOS: Reading 59-b

The end year stock price is estimated to be $\$0.24 \times 15 = \3.60

The dividend is $\$0.24 \times 0.35 = \0.084

The return is $(\$3.60 - \$3.20 + \$0.084)/\$3.20 = 15.1\%$

Reference: CFA® Program Curriculum, Volume 5, pp. 165-167.

8. If the real risk-free rate of return is 2% and the expected inflation rate is 5%, then the nominal risk-free rate is closest to:

- A. 1.0%.
- B. 2.5%.
- C. 2.9%.
- D. 7.1%.

Correct Answer: D..... LOS: Reading 60-d

Nominal RFR = $(1 + \text{real RFR})(1 + \text{expected inflation}) - 1 = 1.02 \times 1.05 - 1 = 7.1\%$

Reference: CFA® Program Curriculum, Volume 5, pp. 191-192.



9. A company maintains a stable dividend payout ratio of 30% and the rate of return on existing equity is 15%. If new projects available to the company earn a return of only 12%, and the company does not raise any outside capital, then the earnings growth rate will be:

- A. 3.6%.
- B. 4.5%.
- C. 8.4%.
- D. 10.5%.

10. If investors' required rate of return from a stock increases then the P/E of the stock will generally:

- A. increase.
- B. decrease.
- C. remain unchanged.
- D. either increase or decrease depending on whether investors' required rate of return from the overall market has changed.



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9. A company maintains a stable dividend payout ratio of 30% and the rate of return on existing equity is 15%. If new projects available to the company earn a return of only 12%, and the company does not raise any outside capital, then the earnings growth rate will be:

- A. 3.6%.
- B. 4.5%.
- C. 8.4%.
- D. 10.5%.

Correct Answer: CLOS: Reading 60-e

Growth rate = retention rate x return on equity (for new investment)
= 0.7 x 12% = 8.4%

Reference: CFA® Program Curriculum, Volume 5, pp. 196-199.

10. If investors' required rate of return from a stock increases then the P/E of the stock will generally:

- A. increase.
- B. decrease.
- C. remain unchanged.
- D. either increase or decrease depending on whether investors' required rate of return from the overall market has changed.

Correct Answer: B.....LOS: Reading 60-c

$$P/E = (D1/E1)/(k - g)$$

where:

k = required rate of return

D1/E1 = expected dividend payout ratio.

g = expected growth rate of dividends

If k increases the P/E will decline.

Reference: CFA® Program Curriculum, Volume 5, pp. 186-188.



11. A company has a dividend payout ratio of 40%, dividends are expected to grow by 5% per annum and the required rate of return is 12%. The price/earnings ratio is closest to:

- A. 5.71.
- B. 5.93.
- C. 8.33.
- D. 8.57.

12. The mature growth stage of an industry's life cycle is usually characterized in the following way:

- A. sales are growing rapidly and profit growth is high.
- B. sales are growing rapidly and there is little competition leading to high profit margins.
- C. sales are growing at the same rate as the economy and the industry is subject to heavy competition.
- D. sales are growing at above the rate of growth of the economy but profit margins are no longer rising since competitors are entering the industry.



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11. A company has a dividend payout ratio of 40%, dividends are expected to grow by 5% per annum and the required rate of return is 12%. The price/earnings ratio is closest to:

- A. 5.71.
- B. 5.93.
- C. 8.33.
- D. 8.57.

Correct Answer: A.....LOS: Reading 60-c

$$\begin{aligned} P/E &= P/E = (D1/E1)/(k - g) \\ &= 0.4/(0.12 - 0.05) = 5.71 \end{aligned}$$

where:

k = required rate of return

D1/E1 = expected dividend payout ratio.

g = expected growth rate of dividends

Reference: CFA® Program Curriculum, Volume 5, pp. 186-188.

12. The mature growth stage of an industry's life cycle is usually characterized in the following way:

- A. sales are growing rapidly and profit growth is high.
- B. sales are growing rapidly and there is little competition leading to high profit margins.
- C. sales are growing at the same rate as the economy and the industry is subject to heavy competition.
- D. sales are growing at above the rate of growth of the economy but profit margins are no longer rising since competitors are entering the industry.

Correct Answer: D.....LOS: Reading 58-c

A and B are rapid accelerating growth, C is market maturity.

Reference: CFA® Program Curriculum, Volume 5, pp. 137-138.



13. Which of the following is least likely to be a major factor in determining the value added at each transformation stage in the value chain?

- A. Economies of scale.
- B. Economies of scope.
- C. Vertical integration.
- D. Network externalities.

14. A preferred stock has a par value of \$100, is trading at \$90, and pays a 6% annual dividend. Assume that there is no risk that the company will default on dividend payments. If an investor's required rate of return is 6.5% the preferred stock looks:

- A. attractive.
- B. expensive.
- C. fairly valued.
- D. the value cannot be determined from the information given.



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13. Which of the following is least likely to be a major factor in determining the value added at each transformation stage in the value chain?

- A. Economies of scale.
- B. Economies of scope.
- C. Vertical integration.
- D. Network externalities.

Correct Answer: C **LOS: Reading 58-b**

The value chain is the process by which raw material is transformed into a product or service. Each transformation in the chain adds value; the amount of value added depends on four main factors:

Learning curve – cost per unit declines as a company gains experience.

Economies of scale – average cost declines as output expands.

Economies of scope – as a company moves into related products, experience and reputation with the original product may help demand.

Network externalities – some products and services gain value as more and more customers use them.

Vertical integration refers to when a manufacturer delivers the entire value chain.

Reference: CFA® Program Curriculum, Volume 5, pp. 136-137.

14. A preferred stock has a par value of \$100, is trading at \$90, and pays a 6% annual dividend. Assume that there is no risk that the company will default on dividend payments. If an investor's required rate of return is 6.5% the preferred stock looks:

- A. attractive.
- B. expensive.
- C. fairly valued.
- D. the value cannot be determined from the information given.

Correct Answer: A **LOS: Reading 60-b**

The value of the preferred stock, since it pays dividends in perpetuity, is $\$6/0.065 = \92.30 . Therefore, at a price of \$90, the stock looks attractive.

Reference: CFA® Program Curriculum, Volume 5, p. 173.



15. Price/book value is an important valuation measure because:
- A. if the price/book value is above 1 then the stock is expensive.
 - B. book value is a good indicator of a company's break-up value.
 - C. the price/book value is not impacted by growth expectations for the company.
 - D. stocks with low price/book values have shown higher risk-adjusted returns than the market returns.
-

16. Which of the following would be expected to lead to a high risk premium for a market?
- A. High liquidity.
 - B. A volatile exchange rate.
 - C. A stable political environment.
 - D. Low levels of financial leverage.



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15. Price/book value is an important valuation measure because:

- A. if the price/book value is above 1 then the stock is expensive.
- B. book value is a good indicator of a company's break-up value.
- C. the price/book value is not impacted by growth expectations for the company.
- D. stocks with low price/book values have shown higher risk-adjusted returns than the market returns.

Correct Answer: D..... LOS: Reading 61-b

- A. is not correct, the P/BV of most industrial companies will be greater than 1.
- B. book value, which is based on historic cost, is often less than the break-up value.
- C. is not correct since growth companies tend to have higher P/BV ratios.

P/BV is one of the valuation measures that is a good indicator of risk-adjusted performance over the long term.

Reference: CFA® Program Curriculum, Volume 5, pp. 210-218.

16. Which of the following would be expected to lead to a high risk premium for a market?

- A. High liquidity.
- B. A volatile exchange rate.
- C. A stable political environment.
- D. Low levels of financial leverage.

Correct Answer: B..... LOS: Reading 60-d

A volatile exchange rate would increase the exchange rate risk, one of the five components of risk that affects the risk premium.

Reference: CFA® Program Curriculum, Volume 5, pp. 191-196.



17. An investor forecasts that the economy is going to peak within the next year. His most likely strategy would be to purchase:

- A. bonds.
- B. stocks.
- C. property.
- D. commodities.

18. It is assumed that a company's dividends will grow at a constant growth rate of 4%, and the current dividend is \$2.50 per share. If an investor's required rate of return is 9% then using the dividend discount model, the value of the company is closest to:

- A. \$27.77.
- B. \$28.89.
- C. \$50.00.
- D. \$52.00.



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17. An investor forecasts that the economy is going to peak within the next year. His most likely strategy would be to purchase:

- A. bonds.
- B. stocks.
- C. property.
- D. commodities.

Correct Answer: A **LOS: Reading 58-a**

At the end of an economic boom stocks, property and commodities will have performed well and will be peaking. Interest rates will be high reflecting strong demand for borrowing and therefore bonds offer the best potential performance. As demand for borrowing slows interest rates will fall providing attractive returns for bonds.

Reference: CFA® Program Curriculum, Volume 5, pp. 130-132.

18. It is assumed that a company's dividends will grow at a constant growth rate of 4%, and the current dividend is \$2.50 per share. If an investor's required rate of return is 9% then using the dividend discount model, the value of the company is closest to:

- A. \$27.77.
- B. \$28.89.
- C. \$50.00.
- D. \$52.00.

Correct Answer: D **LOS: Reading 60-b**

$$V = D1/(k - g)$$

where

k = required rate of return

D1 = dividend in following year

g = expected growth rate of dividends

$$V = D1/(k - g) = 2.50(1.04)/(0.09 - 0.04) = \$52.00$$

Reference: CFA® Program Curriculum, Volume 5, pp. 177-182.



19. In an industry the largest two firms have a market share of 20% each and six firms have a market share of 10% each. The five firm concentration ratio and Herfindahl index are:

	Concentration ratio	Herfindahl index
A.	62.5%	0.11
B.	70.0%	0.11
C.	62.5%	0.14
D.	70.0%	0.14

20. A firm with a high business risk is most likely to:

- A. have cyclical stock.
- B. have defensive stock.
- C. be a cyclical company.
- D. be a defensive company



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19. In an industry the largest two firms have a market share of 20% each and six firms have a market share of 10% each. The five firm concentration ratio and Herfindahl index are:

	Concentration ratio	Herfindahl index
A.	62.5%	0.11
B.	70.0%	0.11
C.	62.5%	0.14
D.	70.0%	0.14

Correct Answer: D..... **LOS: Reading 58-d**

The five firm concentration ratio is $20\% + 20\% + 10\% + 10\% + 10\% = 70\%$

Herfindahl index =

$$H = M_1^2 + M_2^2 + \dots + M_n^2 = 2 \times (0.20)^2 + 6 \times (0.10)^2 = 0.14$$

Reference: CFA® Program Curriculum, Volume 5, pp. 138-139.

20. A firm with a high business risk is most likely to:

- A. have cyclical stock.
- B. have defensive stock.
- C. be a cyclical company.
- D. be a defensive company

Correct Answer: C **LOS: Reading 60-b**

High business risk (sales leverage and/or operating leverage) leads to a company having volatile earnings, it usually does well in times of economic expansion and badly in times of economic slowdown. This is the definition of a cyclical company.

Reference: CFA® Program Curriculum, Volume 5, pp. 177-181.



21. ABC Commodities is sensitive to the economic cycle and an analyst decides that the six years ending 2007 reflect a business cycle for the company. He collects the following data: earnings per share (EPS), book value per share (BVPS) and return on equity (ROE):

	2002	2003	2004	2005	2006	2007
Adjusted* EPS, \$	1.30	2.65	5.50	4.30	3.25	1.00
ROE* %	0.04	0.13	0.22	0.18	0.12	0.03
BVPS, \$						32.00

* Adjusted for non-recurring items

The current share price of ABC Commodities is \$30.00

The P/E of ABC commodities based on the method of average ROE is closest to:

- A. 7.81.
- B. 9.37.
- C. 10.00.
- D. 33.33.

22. If a firm pays out 30% of its earnings as dividends, its return on equity is 12%, and its return on capital is 8%, then the long-term dividend growth rate is closest to:

- A. 2.4%.
- B. 3.6%.
- C. 5.6%.
- D. 8.4%.



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21. ABC Commodities is sensitive to the economic cycle and an analyst decides that the six years ending 2007 reflect a business cycle for the company. He collects the following data: earnings per share (EPS), book value per share (BVPS) and return on equity (ROE):.

	2002	2003	2004	2005	2006	2007
Adjusted* EPS, \$	1.30	2.65	5.50	4.30	3.25	1.00
ROE* %	0.04	0.13	0.22	0.18	0.12	0.03
BVPS, \$						32.00

* Adjusted for non-recurring items

The current share price of ABC Commodities is \$30.00

The P/E of ABC commodities based on the method of average ROE is closest to:

- A. 7.81.
- B. 9.37.
- C. 10.00.
- D. 33.33.

Correct Answer: A **LOS: Reading 61-b**

Use the average ROE over the period, and multiply by the current book value.

$$\text{Average ROE} = (0.04 + 0.13 + 0.22 + 0.18 + 0.12 + 0.03)/6 = 0.12$$

$$\text{Normal EPS} = 0.12 \times 32.0 = 3.84$$

$$\text{P/E} = 30.00/3.84 = 7.81$$

Reference: CFA® Program Curriculum, Volume 5, pp. 206-210.

22. If a firm pays out 30% of its earnings as dividends, its return on equity is 12%, and its return on capital is 8%, then the long-term dividend growth rate is closest to:

- A. 2.4%.
- B. 3.6%.
- C. 5.6%.
- D. 8.4%.

Correct Answer: D **LOS: Reading 60-e**

$$\text{Growth} = \text{Earnings Retention Rate} \times \text{Return on Equity} = 0.7 \times 12\% = 8.4\%$$

Reference: CFA® Program Curriculum, Volume 5, pp. 196-197.



23. If a stock has a high P/E ratio relative to the market P/E, this is least likely to be explained by:
- A. the return on equity is higher for the stock than the market average.
 - B. investors' required rate of return is higher for this stock than the market.
 - C. the expected growth rate of dividends is higher than the average in the market.
 - D. the quality of earnings is higher leading to less uncertainty over the stock's performance.
-

24. Which is the main factor which decides which stage of its life cycle an industry is in?
- A. Profit margins.
 - B. Size of asset base.
 - C. Rate of sales growth.
 - D. Levels of competition.



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23. If a stock has a high P/E ratio relative to the market P/E, this is least likely to be explained by:

- A. the return on equity is higher for the stock than the market average.
- B. investors' required rate of return is higher for this stock than the market.
- C. the expected growth rate of dividends is higher than the average in the market.
- D. the quality of earnings is higher leading to less uncertainty over the stock's performance.

Correct Answer: B.....**LOS: Reading 60-c**

$$P/E = (D1/E1)/(k - g)$$

where:

k = required rate of return

D1/E1 = expected dividend payout ratio

g = expected growth rate of dividends

A high g, or a low k, will lead to a higher P/E ratio. High quality of earnings would tend to reduce risk and therefore reduce k.

Reference: CFA® Program Curriculum, Volume 5, pp. 186-188.

24. Which is the main factor which decides which stage of its life cycle an industry is in?

- A. Profit margins.
- B. Size of asset base.
- C. Rate of sales growth.
- D. Levels of competition.

Correct Answer: C**LOS: Reading 58-c**

The main factor that categorizes industry life cycles is the rate of sales growth.

Reference: CFA® Program Curriculum, Volume 5, pp. 137-138.



25. A high risk premium for investing in a country's stock market might be a result of:

- A. business risk is relatively low.
 - B. the stock market is very liquid.
 - C. the political situation is unstable.
 - D. companies use a low level of financial leverage.
-

26. The power of buyers of the products or services of an industry will be higher if:

- A. products are standardized.
- B. buyers make small purchases.
- C. raw materials are standardized.
- D. buyers are individuals rather than firms.



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25. A high risk premium for investing in a country's stock market might be a result of:

- A. business risk is relatively low.
- B. the stock market is very liquid.
- C. the political situation is unstable.
- D. companies use a low level of financial leverage.

Correct Answer: C **LOS: Reading 60-d**

Low business risk, high liquidity and low financial leverage would all tend to reduce the risk premium. An unstable political environment would usually increase risk and the premium required.

Reference: CFA® Program Curriculum, Volume 5, pp. 193-196.

26. The power of buyers of the products or services of an industry will be higher if:

- A. products are standardized.
- B. buyers make small purchases.
- C. raw materials are standardized.
- D. buyers are individuals rather than firms.

Correct Answer: A **LOS: Reading 58-e**

Standardization of products increases the buyers' power because they can purchase elsewhere so A is correct.

If buyers have much larger businesses they have more power than individuals or customers making small purchases. Raw materials being standardized affects supplier, not buyer, power.

Reference: CFA® Program Curriculum, Volume 5, p. 143.



27. An analyst forecasts that a company will pay a dividend of \$2.30 next year, \$2.60 in the following year and dividends will grow at 5% thereafter. If an investor's required rate of return is 12%, the value of the company is closest to:

- A. \$33.73.
- B. \$35.21.
- C. \$38.48.
- D. \$42.04.

28. Which of the following is least likely to be a reason why price/cash flow is considered a useful valuation method?

- A. It is consistently calculated by analysts.
- B. Cash flow is a good indicator of financial strength of a company.
- C. Cash flow is less subject to distortion due to accounting methods than earnings.
- D. Examining the trends in relative price/cash flow ratios provides information on how the market is valuing a stock.



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27. An analyst forecasts that a company will pay a dividend of \$2.30 next year, \$2.60 in the following year and dividends will grow at 5% thereafter. If an investor's required rate of return is 12%, the value of the company is closest to:

- A. \$33.73.
- B. \$35.21.
- C. \$38.48.
- D. \$42.04.

Correct Answer: B..... LOS: Reading 60-b

Discount back the first two years' dividends at 12% to get \$2.05 and \$2.07.

Thereafter apply the DDM to give value of shares at the end of the second year as $2.73 / (0.12 - 0.05) = \$39$, which discounts back to \$31.09.

The value of the company = $\$2.05 + \$2.07 + \$31.09 = \35.21

Reference: CFA® Program Curriculum, Volume 5, pp. 176-181.



28. Which of the following is least likely to be a reason why price/cash flow is considered a useful valuation method?

- A. It is consistently calculated by analysts.
- B. Cash flow is a good indicator of financial strength of a company.
- C. Cash flow is less subject to distortion due to accounting methods than earnings.
- D. Examining the trends in relative price/cash flow ratios provides information on how the market is valuing a stock.

Correct Answer: A..... **LOS: Reading 61-a**

Analysts use different definitions of cash flow, although free cash flow is probably the most appropriate.

Reference: CFA® Program Curriculum, Volume 5, pp. 221-223.



Study Session 15: Fixed Income Investments: Basic Concepts

This study session presents the foundation for fixed income investments, one of the largest and fastest growing segments of global financial markets. It begins with an introduction to the basic features and characteristics of fixed income securities and the associated risks. The session then builds by describing the primary issuers, sectors, and types of bonds. Finally, the study session concludes with an introduction to yields and spreads and the effect of monetary policy on financial markets. These readings combined are the primary building blocks for mastering the analysis, valuation, and management of fixed income securities.

Reading 62: Features of Debt Securities

Reading 63: Risks Associated with Investing in Bonds

Reading 64: Overview of Bond Sectors and Instruments

Reading 65: Understanding Yield Spreads

Reading 66: Monetary Policy in an Environment of Global Financial Markets



1. A floating-rate note has a cap and a floor with the coupon formula:

$$\text{coupon rate} = 25\% - 3 \times (\text{six-month LIBOR})$$

This floating-rate note is called:

- A. a step-up note.
- B. an inverse floater.
- C. a deleveraged floater.
- D. a dual-indexed floater.

-
2. Information asymmetry between a central bank and the market is most likely to result in:

- A. inaction by the central bank.
- B. loss of credibility of the central bank.
- C. inconsistency in data held on the central bank's database.
- D. central bank policies that are unexpected by the market participants.



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1. A floating-rate note has a cap and a floor with the coupon formula:

coupon rate = 25% – 3 x (six-month LIBOR)

This floating-rate note is called:

- A. a step-up note.
- B. an inverse floater.
- C. a deleveraged floater.
- D. a dual-indexed floater.

Correct Answer: B..... LOS: Reading 62-b

An inverse floater has a coupon formula where the coupon rate rises if the reference rate falls and vice versa. There are often caps and floors on an inverse floater to prevent there being a negative coupon if LIBOR increases sharply or an excessively high coupon if LIBOR drops sharply.

Reference: CFA® Program Curriculum, Volume 5, pp. 242-245.

2. Information asymmetry between a central bank and the market is most likely to

result in:

- A. inaction by the central bank.
- B. loss of credibility of the central bank.
- C. inconsistency in data held on the central bank's database.
- D. central bank policies that are unexpected by the market participants.

Correct Answer: D..... LOS: Reading 66-c

If the central bank has access to information which is not known by the market, the risk is its actions will not be correctly anticipated.

Reference: CFA® Program Curriculum, Volume 5, p. 382.



3. Which of the following statements is least accurate regarding the term to maturity of a bond?
- A. The term to maturity is always fixed.
 - B. The yield offered on a bond depends on the term to maturity.
 - C. The price fluctuation (price volatility) depends on, among other factors, the term to maturity.
 - D. It tells the investor the number of years before the principal is paid in full and the period over which interest payments can be expected.
-
4. Which of the following statements is the least accurate regarding callable bonds?
- A. The issuer's obligation of paying interest ends at the call date.
 - B. The issuer has the right to retire the issue prior to the maturity date.
 - C. A callable bond is more likely to be called after interest rates have fallen.
 - D. A callable bond will generally be issued at a lower coupon rate than a non-callable bond with the same terms.



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3. Which of the following statements is least accurate regarding the term to maturity of a bond?
- A. The term to maturity is always fixed.
 - B. The yield offered on a bond depends on the term to maturity.
 - C. The price fluctuation (price volatility) depends on, among other factors, the term to maturity.
 - D. It tells the investor the number of years before the principal is paid in full and the period over which interest payments can be expected.

Correct Answer: A.....**LOS: Reading 62-a**

There may be provisions in the indenture that allow the issuer or the bondholder to alter the term to maturity.

Reference: CFA® Program Curriculum, Volume 5, pp. 239-240.

4. Which of the following statements is the least accurate regarding callable bonds?
- A. The issuer's obligation of paying interest ends at the call date.
 - B. The issuer has the right to retire the issue prior to the maturity date.
 - C. A callable bond is more likely to be called after interest rates have fallen.
 - D. A callable bond will generally be issued at a lower coupon rate than a non-callable bond with the same terms.

Correct Answer: D.....**LOS: Reading 62-e**

D is not correct, a callable bond will normally be offered at a higher coupon rate to compensate the investor for the possibility that the bond might be called in prior to maturity.

Reference: CFA® Program Curriculum, Volume 5, pp. 247-251.



5. A bond is priced at 90. If yields decline by 25 basis points the price rises to 94.8 and if yields rise by 25 basis points the price falls to 84.9. The duration is closest to:

- A. 9.9.
- B. 11.0.
- C. 22.0.
- D. 44.0.

6. Which of the following tools is least likely to be used to manage the level of interest rates in an economy?

- A. The discount rate.
- B. Corporate tax rates.
- C. Open market operations.
- D. Bank reserve requirements.



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5. A bond is priced at 90. If yields decline by 25 basis points the price rises to 94.8 and if yields rise by 25 basis points the price falls to 84.9. The duration is closest to:

- A. 9.9.
- B. 11.0.
- C. 22.0.
- D. 44.0.

Correct Answer: C **LOS: Reading 63-f**

The duration formula is:

$$\frac{\text{price if yields decline} - \text{price if yields rise}}{2 \times (\text{initial price}) \times (\text{change in yield in decimals})}$$
$$= (94.8 - 84.9) / (2 \times 90 \times 0.0025) = 22.0$$

Reference: CFA® Program Curriculum, Volume 5, pp. 269-271.

6. Which of the following tools is least likely to be used to manage the level of interest rates in an economy?

- A. The discount rate.
- B. Corporate tax rates.
- C. Open market operations.
- D. Bank reserve requirements.

Correct Answer: B **LOS: Reading 65-a**

Adjusting corporate tax rates is a tool that is used as part of fiscal, not monetary, policy.

Reference: CFA® Program Curriculum, Volume 5, pp. 344-345.



7. Which of the following is least likely to be used as a type of external credit enhancement?

- A. Letters of credit.
 - B. Bond insurance.
 - C. Corporate guarantee.
 - D. Sequential disbursement.
-

8. The role of credit rating agencies is to:

- A. perform valuations of companies.
- B. forecast the direction of interest rates.
- C. extend a credit guarantee to bond issues.
- D. report on the likelihood of an issuer defaulting.



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7. Which of the following is least likely to be used as a type of external credit enhancement?

- A. Letters of credit.
- B. Bond insurance.
- C. Corporate guarantee.
- D. Sequential disbursement.

Correct Answer: D.....LOS: Reading 64-e

Sequential disbursement rules are techniques for internal credit enhancement that are commonly used in structured securities such as collateralized mortgage obligations (CMOs).

Reference: CFA® Program Curriculum, Volume 5, pp. 305-312.

8. The role of credit rating agencies is to:

- A. perform valuations of companies.
- B. forecast the direction of interest rates.
- C. extend a credit guarantee to bond issues.
- D. report on the likelihood of an issuer defaulting.

Correct Answer: D.....LOS: Reading 63-j

A is the role of investment bankers or accounting firms, B is the role of economists, and C is the role of a bank or a credit insurance company.

Reference: CFA® Program Curriculum, Volume 5, pp. 278-281.



9. Which of the following factors is least likely to affect the yield spread of a bond?

- A. The type of issuer.
 - B. The coupon rate of the bond.
 - C. The expected liquidity of the issue.
 - D. The behavior of any embedded options.
-

10. Which of the following will be least important in explaining a bond price's volatility?

- A. Its coupon.
- B. Its par value.
- C. Its term to maturity.
- D. The direction of any yield change.



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9. Which of the following factors is least likely to affect the yield spread of a bond?
- A. The type of issuer.
 - B. The coupon rate of the bond.
 - C. The expected liquidity of the issue.
 - D. The behavior of any embedded options.

Correct Answer: B.....LOS: Reading 65-e

Coupon rates generally do not affect the yield spread as the price of the bond will adjust according to investors' required returns.

Reference: CFA® Program Curriculum, Volume 5, pp. 355-356.

10. Which of the following will be least important in explaining a bond price's volatility?
- A. Its coupon.
 - B. Its par value.
 - C. Its term to maturity.
 - D. The direction of any yield change.

Correct Answer: B.....LOS: Reading 63-c

A bond's par value determines the pricing of a bond but its interest rate sensitivity mainly depends on its coupon, its term to maturity, market level of yields and the direction of the yield change.

Reference: CFA® Program Curriculum, Volume 5, pp. 266-267.



11. The most recently auctioned Treasury bonds are called:

- A. fallen angels.
- B. flower bonds.
- C. on-the-run issues.
- D. benchmark bonds.

12. Which one of the following descriptions relates to yield curve risk? The risk that investors face when

- A. purchasing power weakens.
- B. a crossover yield is reached for a callable bond.
- C. reinvestment rates are lower than the yield to maturity.
- D. yields of bonds with different maturities do not move in parallel.



434 Study Session 15:

11. The most recently auctioned Treasury bonds are called:

- A. fallen angels.
- B. flower bonds.
- C. on-the-run issues.
- D. benchmark bonds.

Correct Answer: C **LOS: Reading 64-b**

The most recently auctioned Treasury bonds are called the on-the-run issues.

Reference: CFA® Program Curriculum, Volume 5, pp. 298-299.

12. Which one of the following descriptions relates to yield curve risk? The risk that investors face when

- A. purchasing power weakens.
- B. a crossover yield is reached for a callable bond.
- C. reinvestment rates are lower than the yield to maturity.
- D. yields of bonds with different maturities do not move in parallel.

Correct Answer: D **LOS: Reading 63-g**

Yield curve risk exists when the bonds in the portfolio have different exposures to how the yield curve shifts. Yield curves usually do not shift in parallel.

Reference: CFA® Program Curriculum, Volume 5, pp. 271-275.



13. Which one is the least likely to be a characteristic of a revenue-type of municipal bond?

- A. It is guaranteed by the federal government.
- B. It is exempt from federal tax for certain investors.
- C. The source of repayment is from revenue-generating projects.
- D. It generally provides a higher return than an equivalent Treasury bond.

14. Which of the following is least likely to be a characteristic of a Collateralized Mortgage Obligation (CMO)?

- A. Most CMOs are overcollateralized.
- B. The structure is a pass-through instead of a pay-through.
- C. The credit quality of most tranches is equivalent to the collateral.
- D. The CMOs are serviced with the cash flows from a pool of mortgages.



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13. Which one is the least likely to be a characteristic of a revenue-type of municipal bond?

- A. It is guaranteed by the federal government.
- B. It is exempt from federal tax for certain investors.
- C. The source of repayment is from revenue-generating projects.
- D. It generally provides a higher return than an equivalent Treasury bond.

Correct Answer: A**LOS: Reading 64-g**

Municipal bonds are not guaranteed by the federal government.

Reference: CFA® Program Curriculum, Volume 5, pp. 312-315.

14. Which of the following is least likely to be a characteristic of a Collateralized Mortgage Obligation (CMO)?

- A. Most CMOs are overcollateralized.
- B. The structure is a pass-through instead of a pay-through.
- C. The credit quality of most tranches is equivalent to the collateral.
- D. The CMOs are serviced with the cash flows from a pool of mortgages.

Correct Answer: B.....**LOS: Reading 64-e**

The main difference between a MBS and a CMO is that the former is a pass-through structure and the latter is a pay-through.

Reference: CFA® Program Curriculum, Volume 5, pp. 305-312.



15. Which of the following is least likely to be a characteristic of a pass-through Government National Mortgage Association (Ginnie Mae) mortgage-backed security?

- A. The average life is the same as the maturity.
 - B. Prepayment rates are a major factor in determining the duration.
 - C. The outgoing cash flows follow the pattern of the incoming cash flows.
 - D. Each monthly payment to investors consists of interest and principal components.
-

16. Bankers acceptances are:

- A. negotiable certificates of deposit.
- B. guarantees issued by a bank on a municipal bond.
- C. nonnegotiable longer-term (over one year) certificates of deposit.
- D. a money market instrument that is created by a non-financial firm and guaranteed by a bank.



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15. Which of the following is least likely to be a characteristic of a pass-through Government National Mortgage Association (Ginnie Mae) mortgage-backed security?

- A. The average life is the same as the maturity.
- B. Prepayment rates are a major factor in determining the duration.
- C. The outgoing cash flows follow the pattern of the incoming cash flows.
- D. Each monthly payment to investors consists of interest and principal components.

Correct Answer: A **LOS: Reading 64-e**

The monthly payments of a MBS consist of principal and interest components. They are not certain, primarily because prepayment events may modify the statistical characteristics of the pool. The maturity of the pool follows the longest maturity of a loan, but the average life is generally less than the maturity due in part to prepayment events. In pass-through securities, the outgoing pattern of cash flows reflects the incoming cash flows.

Reference: CFA® Program Curriculum, Volume 5, pp. 305-312.

16. Bankers acceptances are:

- A. negotiable certificates of deposit.
- B. guarantees issued by a bank on a municipal bond.
- C. nonnegotiable longer-term (over one year) certificates of deposit.
- D. a money market instrument that is created by a non-financial firm and guaranteed by a bank.

Correct Answer: D **LOS: Reading 64-h**

A bankers acceptance is when a bank accepts the ultimate responsibility to repay a loan to its holder, it is a vehicle which is commonly issued to facilitate commercial trade transactions.

Reference: CFA® Program Curriculum, Volume 5, pp. 326-328.



17. The motivation for a corporation to issue an asset-backed security is:
- A. to dispose of unproductive assets.
 - B. to strengthen the affirmative covenants of all the issued debt securities.
 - C. to obtain funding which is lower in cost than the corporation's rating allows.
 - D. to take advantage of the legal loophole in the jurisdiction of a different country.
-

18. A downward-sloping yield curve may be caused by:
- A. investors expect short-term interest rates to fall.
 - B. investors expect short-term interest rates to rise.
 - C. demand outstrips supply for short-term securities.
 - D. supply outstrips demand for long-term securities



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17. The motivation for a corporation to issue an asset-backed security is:

- A. to dispose of unproductive assets.
- B. to strengthen the affirmative covenants of all the issued debt securities.
- C. to obtain funding which is lower in cost than the corporation's rating allows.
- D. to take advantage of the legal loophole in the jurisdiction of a different country.

Correct Answer: C **LOS: Reading 64-i**

The motivation is often that a corporation's credit rating is less than the rating that is given to the collateral being used in the asset-backed security. An example of this is when a company's customers have a higher average rating than the company itself so the receivables can be securitized to form an asset-backed security.

Reference: CFA® Program Curriculum, Volume 5, pp. 328-330.

18. A downward-sloping yield curve may be caused by:

- A. investors expect short-term interest rates to fall.
- B. investors expect short-term interest rates to rise.
- C. demand outstrips supply for short-term securities.
- D. supply outstrips demand for long-term securities

Correct Answer: A **LOS: Reading 65-c**

A downward-sloping yield curve may be caused by expectations that short-term rates are going to fall, or by demand outstripping supply for long-term securities, pushing down long-term rates, or by supply outstripping demand for short-term securities, pushing up short-term rates.

Reference: CFA® Program Curriculum, Volume 5, pp. 347-352.



19. If a country's economy is entering a recession then one would expect that the yield spread between government bonds and corporate bonds that are rated single A to:

- A. be wider than normal, since the risk of the A-rated bonds defaulting is lower.
 - B. be unaffected, since the risk of the A-rated bonds are unaffected by recession.
 - C. be wider than normal, since the risk of the A-rated bonds defaulting is higher.
 - D. be tighter than normal, since the risk of the A-rated bonds defaulting is higher.
-

20. An increase in yield volatility means that:

	Prices of callable bonds	Value of embedded call option
A.	rise	increases
B.	rise	decreases
C.	fall	increases
D.	fall	decreases



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19. If a country's economy is entering a recession then one would expect that the yield spread between government bonds and corporate bonds that are rated single A to:

- A. be wider than normal, since the risk of the A-rated bonds defaulting is lower.
- B. be unaffected, since the risk of the A-rated bonds are unaffected by recession.
- C. be wider than normal, since the risk of the A-rated bonds defaulting is higher.
- D. be tighter than normal, since the risk of the A-rated bonds defaulting is higher.

Correct Answer: C **LOS: Reading 65-f**

If an economy is entering recession then the risk of default of the corporate bonds will increase and therefore the extra return required for holding these bonds should be higher than normal.

Reference: CFA® Program Curriculum, Volume 5, pp. 355-356.

20. An increase in yield volatility means that:

- | | Prices of callable bonds | Value of embedded call option |
|----|--------------------------|-------------------------------|
| A. | rise | increases |
| B. | rise | decreases |
| C. | fall | increases |
| D. | fall | decreases |

Correct Answer: C **LOS: Reading 63-d**

Price of callable bond = Price of option-free bond – Price of embedded call option

The value of the embedded option goes up when yield volatility increases. So if the price of the embedded call option increases, then the price of callable bond will decrease if the price of the option-free bond remains the same.

Reference: CFA® Program Curriculum, Volume 5, p. 267.



21. Commercial paper:

- A. pays interest on a semiannual basis.
- B. is actively traded in the secondary market.
- C. is sold by Treasury auction on a weekly basis.
- D. is issued by both financial and nonfinancial companies.

22. Which of the following types of bond will generally have the highest reinvestment risk?

- A. Zero-coupon bonds.
- B. High-coupon callable bonds.
- C. Low-coupon Treasury bonds.
- D. Bonds with embedded put options.



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21. Commercial paper:

- A. pays interest on a semiannual basis.
- B. is actively traded in the secondary market.
- C. is sold by Treasury auction on a weekly basis.
- D. is issued by both financial and nonfinancial companies.

Correct Answer: D..... LOS: Reading 64-h

Commercial paper is a short-term unsecured promissory note, which is usually zero-coupon. It is issued by both financial companies (usually direct paper) and non-financial companies, and not normally traded in the secondary market.

Reference: CFA® Program Curriculum, Volume 5, p. 325.

22. Which of the following types of bond will generally have the highest reinvestment risk?

- A. Zero-coupon bonds.
- B. High-coupon callable bonds.
- C. Low-coupon Treasury bonds.
- D. Bonds with embedded put options.

Correct Answer: B..... LOS: Reading 63-i

Reinvestment risk will be highest with callable bonds with a high coupon rate. When a callable bond is called, it generally means that interest rates are low. So the investor will have cash in hand which he or she will have to invest in a low interest rate environment.

Reference: CFA® Program Curriculum, Volume 5, pp. 276-277.



23. A repurchase agreement is an example of:

- A. an embedded option.
- B. an exchangeable bond.
- C. a margin buying arrangement.
- D. a collateralized borrowing arrangement.

24. A variable-rate security where the coupon rate moves in the opposite direction to a reference rate is:

- A. a range note.
- B. a ratchet bond.
- C. an inverse floater.
- D. a deleveraged floater.



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23. A repurchase agreement is an example of:

- A. an embedded option.
- B. an exchangeable bond.
- C. a margin buying arrangement.
- D. a collateralized borrowing arrangement.

Correct Answer: D..... **LOS: Reading 62-f**

A repurchase agreement is the sale of a security with a commitment by the seller to buy the same security back. The repurchase price will reflect the implied interest rate, i.e. repo rate or the borrowing rate of the collateralized loan.

Reference: CFA® Program Curriculum, Volume 5, p. 255.

24. A variable-rate security where the coupon rate moves in the opposite direction to a reference rate is:

- A. a range note.
- B. a ratchet bond.
- C. an inverse floater.
- D. a deleveraged floater.

Correct Answer: C..... **LOS: Reading 62-b**

An inverse floater is a floating-rate security whose coupon formula makes the coupon rate move in the opposite direction to the reference rate.

Reference: CFA® Program Curriculum, Volume 5, pp. 242-246.



25. A bond will trade at a premium if:
- A. it is a zero-coupon bond.
 - B. it is a bond that pays a coupon.
 - C. market interest rates are lower than the coupon rate.
 - D. market interest rates are higher than the coupon rate.
-

26. The most appropriate definition of duration is:
- A. the slope of the yield curve.
 - B. the time to maturity of a bond.
 - C. the average time to cash flows being received.
 - D. a measure of a bond's sensitivity to changes in yield.



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25. A bond will trade at a premium if:

- A. it is a zero-coupon bond.
- B. it is a bond that pays a coupon.
- C. market interest rates are lower than the coupon rate.
- D. market interest rates are higher than the coupon rate.

Correct Answer: C **LOS: Reading 63-b**

When market interest rates are below the coupon rate the bondholders will demand a lower rate than the coupon rate so the bond price will be set higher than its par value.

Reference: CFA® Program Curriculum, Volume 5, pp. 265-266.

26. The most appropriate definition of duration is:

- A. the slope of the yield curve.
- B. the time to maturity of a bond.
- C. the average time to cash flows being received.
- D. a measure of a bond's sensitivity to changes in yield.

Correct Answer: D **LOS: Reading 63-f**

Choice A is not correct, duration is the slope of the price-yield curve. Choice B is only true for a zero-coupon bond. Choice C would be correct if it said the weighted average time to cash flows, weighted by the amounts of the cash flows.

Reference: CFA® Program Curriculum, Volume 5, pp. 269-271.



27. A bond investor wishes to minimize interest rate risk. Which of the following bonds would be most likely to be the most suitable investment?

- A. A 5% coupon bond that matures in 5 years' time.
 - B. A 3% coupon bond that matures in 20 years' time.
 - C. A 10% coupon bond that matures in 3 years' time.
 - D. A zero-coupon bond that matures in 15 years' time.
-

28. Downgrade risk refers to the risk that:

- A. interest rates rise.
- B. the liquidity of a bond declines.
- C. the credit rating of a bond is reduced.
- D. the currency that the bond is issued in depreciates.



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27. A bond investor wishes to minimize interest rate risk. Which of the following bonds would be most likely to be the most suitable investment?

- A. A 5% coupon bond that matures in 5 years' time.
- B. A 3% coupon bond that matures in 20 years' time.
- C. A 10% coupon bond that matures in 3 years' time.
- D. A zero-coupon bond that matures in 15 years' time.

Correct Answer: C **LOS: Reading 63-c**

Short-dated, high coupon bonds tend to be less interest-rate sensitive.

Reference: CFA® Program Curriculum, Volume 5, pp. 266-267.



28. Downgrade risk refers to the risk that:

- A. interest rates rise.
- B. the liquidity of a bond declines.
- C. the credit rating of a bond is reduced.
- D. the currency that the bond is issued in depreciates.

Correct Answer: C.....**LOS: Reading 63-j**

The assignment of an inferior credit rating is referred to as downgrading.

Reference: CFA® Program Curriculum, Volume 5, pp. 278-281.



Study Session 16: Fixed Income Investments: Analysis and Valuation

This study session illustrates the primary tools for valuation and analysis of fixed income securities and markets. It begins with a study of basic valuation theory and techniques for bonds and concludes with a more in-depth explanation of the primary tools for fixed income investment valuation, specifically, interest rate and yield valuation and interest rate risk measurement and analysis.

Reading 67: Introduction to the Valuation of Debt Securities

Reading 68: Yield Measures, Spot Rates, and Forward Rates

Reading 69: Introduction to the Measurement of Interest Rate Risk



1. The arbitrage-free value of a Treasury bond is:
- A. the bid price of the bond being quoted by market makers.
 - B. the price of an on-the-run Treasury bond with the same maturity.
 - C. the value of a bond calculated as the present value of each cash flow discounted at the corresponding Treasury spot rate.
 - D. the value of a bond calculated as the present value of each cash flow discounted back at the average yield to maturity of Treasury bonds with the same maturity.
-

2. The following data has been provided:

Years to maturity	Spot rate
0.5	8.75%
1.0	6.25%
1.5	5.00%

The six-month forward rate one year from now is closest to:

- A. 1.26%.
- B. 2.52%.
- C. 3.78%.
- D. 8.77%.



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1. The arbitrage-free value of a Treasury bond is:
- A. the bid price of the bond being quoted by market makers.
 - B. the price of an on-the-run Treasury bond with the same maturity.
 - C. the value of a bond calculated as the present value of each cash flow discounted at the corresponding Treasury spot rate.
 - D. the value of a bond calculated as the present value of each cash flow discounted back at the average yield to maturity of Treasury bonds with the same maturity.

Correct Answer: C **LOS: Reading 67-f**

The arbitrage-free value of a Treasury bond is the value of a bond calculated as the present value of each cash flow discounted at the corresponding Treasury spot rate rather than at the yield to maturity.

Reference: CFA® Program Curriculum, Volume 5, pp. 404-406.

2. The following data has been provided:

Years to maturity	Spot rate
0.5	8.75%
1.0	6.25%
1.5	5.00%

The six-month forward rate one year from now is closest to:

- A. 1.26%.
- B. 2.52%.
- C. 3.78%.
- D. 8.77%.

Correct Answer: B..... **LOS: Reading 68-h**

$$1f_2 = [(1 + 0.025)^3 / (1 + 0.03125)^2] - 1 = 1.26\%$$

The forward rate is $1.26\% \times 2 = 2.52\%$

Reference: CFA® Program Curriculum, Volume 5, pp. 453-457.



3. A 6% coupon bond pays interest semiannually, has duration of 10, sells for \$800, and is priced at a yield to maturity (YTM) of 8%. If the YTM increases to 9%, the expected decrease in price is:

- A. \$10.
- B. \$64.
- C. \$72.
- D. \$80.

4. For a given large change in yields, if the price gain of a bond is less than the price loss then the cause can be explained by:

- A. illiquidity.
- B. positive duration.
- C. negative duration.
- D. negative convexity.



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3. A 6% coupon bond pays interest semiannually, has duration of 10, sells for \$800, and is priced at a yield to maturity (YTM) of 8%. If the YTM increases to 9%, the expected decrease in price is:

- A. \$10.
- B. \$64.
- C. \$72.
- D. \$80.

Correct Answer: D..... **LOS: Reading 69-d**

Percentage change in price = $-D \times \Delta y \times 100 = -10 \times 0.01 \times 100 = -10$

The predicted decrease in price = $10\% \times \$800 = \80

Reference: CFA® Program Curriculum, Volume 5, pp. 488-489.

4. For a given large change in yields, if the price gain of a bond is less than the price loss then the cause can be explained by:

- A. illiquidity.
- B. positive duration.
- C. negative duration.
- D. negative convexity.

Correct Answer: D..... **LOS: Reading 69-c**

Negative convexity will make the price gain smaller than the price fall.

Reference: CFA® Program Curriculum, Volume 5, pp. 484-488.



5. A short-term forward rate curve is plotted on the same chart as the Treasury yield curve. If the yield curve is upward sloping then we can conclude that the forward rate curve will be

- A. above the yield curve.
 - B. below the yield curve.
 - C. flatter than the yield curve.
 - D. steeper than the yield curve.
-

6. Which of the following is a characteristic of Macaulay duration? Macaulay duration

- A. cannot be used for zero-coupon bonds.
- B. can be used to compute modified duration.
- C. can be used for bonds with embedded options.
- D. is the same as Modified duration when a bond pays annual coupons.



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5. A short-term forward rate curve is plotted on the same chart as the Treasury yield curve. If the yield curve is upward sloping then we can conclude that the forward rate curve will be
- A. above the yield curve.
 - B. below the yield curve.
 - C. flatter than the yield curve.
 - D. steeper than the yield curve.

Correct Answer: A **LOS: Reading 68-h**

When the yield curve is upward sloping investors are expecting yields to rise so the forward rates will be above the spot rates. We cannot conclude whether the forward rate curve will be steeper or flatter without more information about the yield curve shape.

Reference: CFA® Program Curriculum, Volume 5, pp. 453-457.

6. Which of the following is a characteristic of Macaulay duration? Macaulay duration
- A. cannot be used for zero-coupon bonds.
 - B. can be used to compute modified duration.
 - C. can be used for bonds with embedded options.
 - D. is the same as Modified duration when a bond pays annual coupons.

Correct Answer: B **LOS: Reading 69-e**

Macaulay duration can be used to calculate modified duration, but has the same problems as modified duration; it cannot be used for bonds where the cash flows are altered by interest rate moves. Modified duration is less than Macaulay duration, for an annual-pay bond we need to divide Macaulay duration by $(1 + \text{yield})$ to get modified duration.

Reference: CFA® Program Curriculum, Volume 5, p. 497.



7. Modified duration is:
- A. any positive or negative number.
 - B. shorter than Macaulay duration for any given bond.
 - C. shorter or longer than the time to maturity of a bond.
 - D. a useful measure of duration for mortgage-backed securities.
-
8. The yield-to-maturity calculation assumes that coupon payments can be reinvested at:
- A. a zero yield.
 - B. the coupon rate.
 - C. the current yield.
 - D. the yield to maturity.



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7. Modified duration is:

- A. any positive or negative number.
- B. shorter than Macaulay duration for any given bond.
- C. shorter or longer than the time to maturity of a bond.
- D. a useful measure of duration for mortgage-backed securities.

Correct Answer: B.....**LOS: Reading 69-e**

Modified duration is based on Macaulay duration which is the weighted-average time until an investor receives payments from a bond, so it cannot be a negative number, and it is shorter than or equal to the time to maturity. It is not used for bonds such as mortgage-backed securities where there are uncertain cash flows.

The link between modified duration and Macaulay duration is given below:

$$\text{Modified duration} = \frac{\text{Macaulay duration}}{(1 + \text{yield}/k)}$$

We can see that modified duration is shorter than Macaulay duration since the yield is positive.

Reference: CFA® Program Curriculum, Volume 5, pp. 496-497.

8. The yield-to-maturity calculation assumes that coupon payments can be reinvested at:

- A. a zero yield.
- B. the coupon rate.
- C. the current yield.
- D. the yield to maturity.

Correct Answer: D.....**LOS: Reading 68-b**

The yield to maturity will only be realized if the following assumptions hold:

- 1. The bond is held to maturity.
- 2. The coupon payments can be reinvested at a yield equivalent to the yield to maturity.

Reference: CFA® Program Curriculum, Volume 5, pp. 424-427.



9. A bond with a coupon of 11.5% and 10 years remaining maturity has an effective duration of 6.2 and convexity of 5.5. The bond is quoted at $\$125\frac{3}{4}$. If the yield to maturity rises by 125 basis points the bond price will be closest to:

- A. \$97.50.
- B. \$115.89.
- C. \$116.12.
- D. \$135.61.

10. If the bond-equivalent yield on a U.S. bond is 5%, the yield on an annual-pay basis is closest to:

- A. 4.94%.
- B. 5.00%.
- C. 5.06%.
- D. 5.51%.



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9. A bond with a coupon of 11.5% and 10 years remaining maturity has an effective duration of 6.2 and convexity of 5.5. The bond is quoted at \$125¾. If the yield to maturity rises by 125 basis points the bond price will be closest to:

- A. \$97.50.
- B. \$115.89.
- C. \$116.12.
- D. \$135.61.

Correct Answer: CLOS: Reading 69-g

$$\begin{aligned}
 \text{Duration effect} &= D \times \Delta y \times 100 \\
 &= -6.2 \times (0.0125) \times 100 \\
 &= -7.75 \\
 \text{Convexity effect} &= \text{Convexity} \times \Delta y^2 \times 100 \\
 &= 5.5 \times (0.0125)^2 \times 100 \\
 &= 0.0859 \\
 \Delta P &= \$125.75 \times (-7.75 + 0.089)\% = \$9.634 \\
 \text{The new price is:} & \\
 \$125.75 - \$9.634 &= \$116.12
 \end{aligned}$$

Reference: CFA® Program Curriculum, Volume 5, pp. 501-502.

10. If the bond-equivalent yield on a U.S. bond is 5%, the yield on an annual-pay basis is closest to:

- A. 4.94%.
- B. 5.00%.
- C. 5.06%.
- D. 5.51%.

Correct Answer: CLOS: Reading 68-d

$$\text{yield on annual-pay bond} = (1 + \text{bond-equivalent yield}/2)^2 - 1 = 5.06\%$$

Reference: CFA® Program Curriculum, Volume 5, p. 431.



11. An investor purchases a ten-year bond at par of \$100 on June 3 2005, which has an annual coupon of 10%. The reinvestment rate at the first coupon date is 9% and at the second coupon date is 8%. The investor expects 12.5% annualized total return for the three years ending on June 1 2008. To reach the investment goal, the bond should be sold on June 1, 2008 at a price closest to:

- A. \$100.
- B. \$110.
- C. \$127.
- D. \$138.

12. To determine whether a bond is undervalued or overvalued, which of the following information is least likely to be required?

- A. The convexity measure.
- B. The current market price.
- C. The appropriate spot rates.
- D. The bond's future cash flows.



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11. An investor purchases a ten-year bond at par of \$100 on June 3 2005, which has an annual coupon of 10%. The reinvestment rate at the first coupon date is 9% and at the second coupon date is 8%. The investor expects 12.5% annualized total return for the three years ending on June 1 2008. To reach the investment goal, the bond should be sold on June 1, 2008 at a price closest to:

- A. \$100.
- B. \$110.
- C. \$127.
- D. \$138.

Correct Answer: B.....LOS: Reading 68-c

The future value of the investment on June 1 2008:

$$100(1.125)^3 = 10(1.09)(1.08) + 10(1.08) + 10 + P$$

$$P = 109.81$$

Reference: CFA® Program Curriculum, Volume 56, pp. 425-429.

12. To determine whether a bond is undervalued or overvalued, which of the following information is least likely to be required?

- A. The convexity measure.
- B. The current market price.
- C. The appropriate spot rates.
- D. The bond's future cash flows.

Correct Answer: A.....LOS: Reading 67-c

Given a bond's cash flows, appropriate spot rates or yield to maturity, the 'theoretical' price or arbitrage-free value can be calculated. Comparing it to the current market price, we can determine if a bond is undervalued or overvalued.

Reference: CFA® Program Curriculum, Volume 5, pp. 404-406.



13. The following data has been gathered:

Maturity (years)	Spot rate
1.0	7.6%
1.5	7.8%
2.0	8.2%
2.5	8.4%
3.0	9.0%

The six-month forward rate two years from now is closest to:

- A. 4.4%.
 - B. 8.3%.
 - C. 8.4%.
 - D. 9.2%.
-

14. The yield to worst for a callable bond is:

- A. the yield to maturity.
- B. the yield assuming the bond is called at the lowest possible call price.
- C. the yield assuming that the bond is called at the first possible call date.
- D. the lowest of the yield to maturity and yields to call, calculated using all possible call dates.



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13. The following data has been gathered:

Maturity (years)	Spot rate
1.0	7.6%
1.5	7.8%
2.0	8.2%
2.5	8.4%
3.0	9.0%

The six-month forward rate two years from now is closest to:

- A. 4.4%.
- B. 8.3%.
- C. 8.4%.
- D. 9.2%.

Correct Answer: D..... **LOS: Reading 68-h**

$$1f4 = [(1 + 0.042)^5 / (1 + 0.041)^4] - 1 = 4.6\%$$

The forward rate is $4.6\% \times 2 = 9.2\%$

Reference: CFA® Program Curriculum, Volume 5, pp. 453-458.

14. The yield to worst for a callable bond is:

- A. the yield to maturity.
- B. the yield assuming the bond is called at the lowest possible call price.
- C. the yield assuming that the bond is called at the first possible call date.
- D. the lowest of the yield to maturity and yields to call, calculated using all possible call dates.

Correct Answer: D..... **LOS: Reading 68-b**

The yield to worst for a callable bond is the lowest yield that an investor could receive so it is the lowest of the yield to maturity and all possible yields to call.

Reference: CFA® Program Curriculum, Volume 5, p. 434.



15. Which of the following statements regarding reinvestment risk is least accurate?
- A. The higher the coupon rate the higher the reinvestment risk.
 - B. Long-dated zero coupon bonds have significant reinvestment risk.
 - C. For a coupon bond the longer the term to maturity the larger the reinvestment risk.
 - D. A bond selling at a premium will have a higher reinvestment risk than a bond selling at a discount.
-

16. A bond with five years remaining term to maturity and a 10% coupon payable annually is trading at \$95. The current yield is closest to:
- A. 9.5%.
 - B. 10.0%.
 - C. 10.5%.
 - D. 11.5%.



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15. Which of the following statements regarding reinvestment risk is least accurate?

- A. The higher the coupon rate the higher the reinvestment risk.
- B. Long-dated zero coupon bonds have significant reinvestment risk.
- C. For a coupon bond the longer the term to maturity the larger the reinvestment risk.
- D. A bond selling at a premium will have a higher reinvestment risk than a bond selling at a discount.

Correct Answer: B.....LOS: Reading 68-c

The higher the coupon rate the more difficult to obtain a comparable high reinvestment yield.

The longer the term to maturity the more uncertainty there is regarding reinvestment opportunities.

A bond selling at a premium means that the reinvestment income will have to compensate for the capital loss due to the premium.

A zero coupon bond will have no coupons to reinvest, so no reinvestment risk.

Reference: CFA® Program Curriculum, Volume 5, pp. 429-432.

16. A bond with five years remaining term to maturity and a 10% coupon payable annually is trading at \$95. The current yield is closest to:

- A. 9.5%.
- B. 10.0%.
- C. 10.5%.
- D. 11.5%.

Correct Answer: CLOS: Reading 68-b

The current yield is then $10/95 = 10.52\%$

Reference: CFA® Program Curriculum, Volume 5, p. 423.



17. Given an initial price of 125.3900 of a bond having duration of 20.00, the price value of a basis point (PVBP) is closest to:

- A. \$0.0627.
- B. \$0.2509.
- C. \$6.27.
- D. \$25.09.

18. One of the limitations of using the weighted average of the durations of bonds in a portfolio in order to measure the sensitivity of the portfolio to a change in market yields is it makes the assumption that:

- A. all bonds have equal convexity.
- B. there will be a non-parallel shift in the yield curve.
- C. the weighted-average convexity of the bonds in the portfolio is zero.
- D. the yields of all the bonds in the portfolio will change by the same amount.



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17. Given an initial price of 125.3900 of a bond having duration of 20.00, the price value of a basis point (PVBP) is closest to:

- A. \$0.0627.
- B. \$0.2509.
- C. \$6.27.
- D. \$25.09.

Correct Answer: B..... LOS: Reading 69-h

The price value of a basis point (PVBP), is simply a special case of dollar duration, it is the absolute value of the change in the price of a bond for a 1 basis point change in yield. It is given by

$$20.00 \times 0.0001 \times 125.39 = \$0.2509$$

Reference: CFA® Program Curriculum, Volume 5, pp. 504-505.

18. One of the limitations of using the weighted average of the durations of bonds in a portfolio in order to measure the sensitivity of the portfolio to a change in market yields is it makes the assumption that:

- A. all bonds have equal convexity.
- B. there will be a non-parallel shift in the yield curve.
- C. the weighted-average convexity of the bonds in the portfolio is zero.
- D. the yields of all the bonds in the portfolio will change by the same amount.

Correct Answer: D..... LOS: Reading 69-f

One assumption is that the yields of all the bonds in the portfolio change by the same amount or in other words, the yield curve makes a parallel shift. In reality, the yields of bonds in a portfolio do not move in parallel.

Reference: CFA® Program Curriculum, Volume 5, pp. 500-501.



19. An investor who requires a return of 10% will value an 8-year zero-coupon bond with a redemption value of \$10,000 at a price closest to:

- A. \$2,000.
- B. \$4,580.
- C. \$9,000.
- D. \$21,436.

20. Which of the following statements is least accurate when referring to the characteristics of effective duration?

- A. Effective duration can be a negative value.
- B. Effective duration can be greater than maturity.
- C. Effective duration can only be calculated for bonds where the cash flows are certain.
- D. Effective duration is useful for estimating price changes of bonds with embedded options.



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19. An investor who requires a return of 10% will value an 8-year zero-coupon bond with a redemption value of \$10,000 at a price closest to:

- A. \$2,000.
- B. \$4,580.
- C. \$9,000.
- D. \$21,436.

Correct Answer: B.....LOS: Reading 67-e

Using a semiannual discount rate to arrive at bond-equivalent yield pricing:

$$\text{Price} = 10,000 / (1.05)^{16} = \$4,580$$

Reference: CFA® Program Curriculum, Volume 5, pp. 398-399.

20. Which of the following statements is least accurate when referring to the characteristics of effective duration?

- A. Effective duration can be a negative value.
- B. Effective duration can be greater than maturity.
- C. Effective duration can only be calculated for bonds where the cash flows are certain.
- D. Effective duration is useful for estimating price changes of bonds with embedded options.

Correct Answer: C.....LOS: Reading 69-e

Effective duration is calculated by empirical observation and a pricing model taking into account changes in cash flows due to yield changes. It can take on a negative value and be greater than maturity, particularly for unconventional securities such as MBS derivatives such as IOs and POs.

Effective duration is the most common tool for estimating price changes of bonds with embedded options or uncertain cash flows.

Reference: CFA® Program Curriculum, Volume 5, p. 496.



21. For a given basis point change in interest rates, the percentage price increase of a bond is more than the price decrease. This indicates that the bond has:

- A. low duration.
- B. high duration.
- C. positive convexity.
- D. negative convexity.

22. Bootstrapping is used to calculate:

- A. theoretical spot rates.
- B. the value of an embedded option.
- C. forward rates from a series of spot rates.
- D. the spread between the yield on a corporate bond and a Treasury bond using the spot rate curve.



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21. For a given basis point change in interest rates, the percentage price increase of a bond is more than the price decrease. This indicates that the bond has:

- A. low duration.
- B. high duration.
- C. positive convexity.
- D. negative convexity.

Correct Answer: C **LOS: Reading 69-c**

Positive convexity occurs when the percentage price increase of a bond is more than the price decrease for a given yield change.

Reference: CFA® Program Curriculum, Volume 5, pp. 480-488.

22. Bootstrapping is used to calculate:

- A. theoretical spot rates.
- B. the value of an embedded option.
- C. forward rates from a series of spot rates.
- D. the spread between the yield on a corporate bond and a Treasury bond using the spot rate curve.

Correct Answer: A **LOS: Reading 68-e**

Bootstrapping is used to calculate theoretical default-free spot rates from on-the-run Treasury bonds.

Reference: CFA® Program Curriculum, Volume 5, pp. 440-445.



23. The presence of a put option in a bond would make its price/yield relationship compared to an equivalent option-free bond:

- A. less convex at lower yields.
- B. less convex at higher yields.
- C. more convex at lower yields.
- D. more convex at higher yields.

24. A non-callable bond has convexity of 94 and the price of the bond is \$120, if interest rates move from 8% to 10% then the price change due to convexity will be closest to:

- A. – \$1.88.
- B. + \$1.88.
- C. + \$2.25.
- D. + \$4.51.



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23. The presence of a put option in a bond would make its price/yield relationship compared to an equivalent option-free bond:

- A. less convex at lower yields.
- B. less convex at higher yields.
- C. more convex at lower yields.
- D. more convex at higher yields.

Correct Answer: B..... **LOS: Reading 69-b**

At lower yields the behavior of the puttable bond is almost the same as an option-free bond because investors will be unlikely to exercise the put option so it has the same convexity as the option-free bond. At higher yields, the price will gravitate toward the put price, slowing down the rate of change of the price, flattening the price/yield curve which reduces convexity compared to the option-free bond.

Reference: CFA® Program Curriculum, Volume 5, pp. 487-488.

24. A non-callable bond has convexity of 94 and the price of the bond is \$120, if interest rates move from 8% to 10% then the price change due to convexity will be closest to:

- A. – \$1.88.
- B. + \$1.88.
- C. + \$2.25.
- D. + \$4.51.

Correct Answer: D..... **LOS: Reading 69-g**

Convexity adjustment

$$= \text{Convexity measure} \times (\Delta y)^2 \times 100$$

$$= 94 \times (.02)^2 \times 100$$

$$= 3.76$$

$$\text{Price change} = \$120 \times 3.76\% = \$4.512$$

Reference: CFA® Program Curriculum, Volume 5, pp. 501-502.



25. The duration of two bonds in a portfolio are 5 and 10 and the bonds are equally weighted in the portfolio. The portfolio duration is:

- A. 5.0.
- B. 7.5.
- C. 10.0.
- D. 50.0.

26. The current yield of a bond is:

- A. always lower than the yield to maturity, if there are no embedded options.
- B. always higher than the yield to maturity, if there are no embedded options.
- C. lower than the yield to maturity, if the bond is trading at a discount to maturity value.
- D. higher than the yield to maturity, if the bond is trading at a discount to maturity value.



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25. The duration of two bonds in a portfolio are 5 and 10 and the bonds are equally weighted in the portfolio. The portfolio duration is:

- A. 5.0.
- B. 7.5.
- C. 10.0.
- D. 50.0.

Correct Answer: B..... LOS: Reading 69-f

The portfolio duration is simply the weighted average of the durations of the bonds in the portfolio.

$$\begin{aligned} D_{\text{port}} &= (\frac{1}{2} \times D1) + (\frac{1}{2} \times D2) \\ &= (\frac{1}{2} \times 5) + (\frac{1}{2} \times 10) \\ &= 7.5 \end{aligned}$$

Reference: CFA® Program Curriculum, Volume 5, pp. 499-501.

26. The current yield of a bond is:

- A. always lower than the yield to maturity, if there are no embedded options.
- B. always higher than the yield to maturity, if there are no embedded options.
- C. lower than the yield to maturity, if the bond is trading at a discount to maturity value.
- D. higher than the yield to maturity, if the bond is trading at a discount to maturity value.

Correct Answer: C LOS: Reading 68-b

The current yield is the annual coupon divided by the market price of the bond. It does not include the capital gain or loss on the bond so if the bond is at a discount the current yield will be lower than the yield to maturity and vice versa.

Reference: CFA® Program Curriculum, Volume 5, p. 423.



27. The measure of spread that an investor would realize over the entire Treasury spot rate curve if the bond is held to maturity is called the:

- A. nominal spread.
- B. intramarket spread.
- C. zero volatility spread.
- D. option-adjusted spread.

28. There are two non-callable bonds with equal duration and one has higher positive convexity than the other. If interest rates rise which bond is expected to fall the least?

- A. The one with lower convexity.
- B. The one with higher convexity.
- C. They will fall by equal amounts.
- D. It will depend on whether interest rates are at a relatively high or relatively low level.



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27. The measure of spread that an investor would realize over the entire Treasury spot rate curve if the bond is held to maturity is called the:

- A. nominal spread.
- B. intramarket spread.
- C. zero volatility spread.
- D. option-adjusted spread.

Correct Answer: C **LOS: Reading 68-f**

The measure of spread that an investor would realize over the entire Treasury spot rate curve if the bond is held to maturity is called zero volatility spread, or Z-spread, or static spread. Nominal spread is a spread at one point on the Treasury yield curve, not over the entire Treasury spot rate curve.

Reference: CFA® Program Curriculum, Volume 5, pp. 445-450.



28. There are two non-callable bonds with equal duration and one has higher positive convexity than the other. If interest rates rise which bond is expected to fall the least?

- A. The one with lower convexity.
- B. The one with higher convexity.
- C. They will fall by equal amounts.
- D. It will depend on whether interest rates are at a relatively high or relatively low level.

Correct Answer: B **LOS: Reading 69-g**

Convexity reduces the size of the fall in the bond price that is estimated using duration.

Reference: CFA® Program Curriculum, Volume 5, pp. 501-502.



Study Session 17: Derivative Investments:

Derivatives—financial instruments that offer a return based on the return of some underlying asset—have become increasingly important and fundamental in effectively managing financial risk and creating synthetic exposures to asset classes. As in other security markets, arbitrage and market efficiency play a critical role in establishing prices and maintaining parity.

This study session builds the conceptual framework for understanding derivative investments (forwards, futures, options, and swaps), derivative markets, and the use of options in risk management.

Reading 70: Derivative Markets and Instruments

Reading 71: Forward Markets and Contracts

Reading 72: Futures Markets and Contracts

Reading 73: Option Markets and Contracts

Reading 74: Swap Markets and Contracts

Reading 75: Risk Management Applications of Option Strategies



1. If a party to a swap agreement wishes to terminate the agreement prior to the expiry of the swap, it might consider:

- A. entering into an offsetting swap agreement.
- B. selling the swap at its market value through the swaps exchange.
- C. offsetting a long position with a short position in the futures market.
- D. instructing their counterparty to terminate the swap with immediate effect so no further payments are necessary.

2. A put option on a stock has an exercise price of \$25.00, the stock is trading at \$22.00 and the price of the put option is \$3.50. The option is:

- A. \$3.00 in-the-money.
- B. \$0.50 out-of-the-money.
- C. \$3.00 out-of-the-money.
- D. \$6.50 out-of-the-money.



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1. If a party to a swap agreement wishes to terminate the agreement prior to the expiry of the swap, it might consider:

- A. entering into an offsetting swap agreement.
- B. selling the swap at its market value through the swaps exchange.
- C. offsetting a long position with a short position in the futures market.
- D. instructing their counterparty to terminate the swap with immediate effect so no further payments are necessary.

Correct Answer: A **LOS: Reading 74-a**

B is not correct since swaps are dealt over-the-counter.

C is not correct: long and short are terms applied to futures positions.

D is not correct. The counterparty must agree to terminate the agreement, unless such a clause is in the contract, and if such an agreement was made the market value of the swap would change hands.

Reference: CFA® Program Curriculum, Volume 6, pp. 127-128.

2. A put option on a stock has an exercise price of \$25.00, the stock is trading at \$22.00 and the price of the put option is \$3.50. The option is:

- A. \$3.00 in-the-money.
- B. \$0.50 out-of-the-money.
- C. \$3.00 out-of-the-money.
- D. \$6.50 out-of-the-money.

Correct Answer: A **LOS: Reading 73-a**

The put option is in-the-money since the exercise price is above the stock price, and the difference between the two prices is \$3.

Reference: CFA® Program Curriculum, Volume 6, pp. 81-84.



3. The clearing house of a futures exchange:
- A. acts as counterparty to each transaction on the exchange.
 - B. acts as market maker in futures contracts traded on the exchange.
 - C. stabilizes futures prices by buying futures when the market is weak and selling futures when the market is strong.
 - D. stabilizes futures prices by selling futures when the market is weak and buying futures when the market is strong.
-

4. When an institution does a swap transaction the counterparty to the transaction is the:
- A. SEC.
 - B. exchange.
 - C. clearing house.
 - D. party who is the end user of the transaction.



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3. The clearing house of a futures exchange:
- A. acts as counterparty to each transaction on the exchange.
 - B. acts as market maker in futures contracts traded on the exchange.
 - C. stabilizes futures prices by buying futures when the market is weak and selling futures when the market is strong.
 - D. stabilizes futures prices by selling futures when the market is weak and buying futures when the market is strong.

Correct Answer: A **LOS: Reading 72-c**

The clearing house does not intentionally take positions in futures or act as market maker. Once a trade is done it acts as counterparty to both parties and they both settle with the clearing house.

Reference: CFA® Program Curriculum, Volume 6, pp. 53-56.

4. When an institution does a swap transaction the counterparty to the transaction is the:
- A. SEC.
 - B. exchange.
 - C. clearing house.
 - D. party who is the end user of the transaction.

Correct Answer: D **LOS: Reading 70-b**

Swaps differ from exchange-traded futures and options where the counterparty risk is the risk that the exchange or clearing house defaults (not likely to happen). The parties to a swap take on the risk of counterparty default.

Reference: CFA® Program Curriculum, Volume 6, pp. 11-12.



5. Which of the following statements is most accurate with respect to forward and futures contracts?

- A. A forward contract refers to a futures contract traded outside the U.S.
- B. A forward contract is another term for, and is identical to, a futures contract.
- C. A forward contract is a type of futures contract but forward contracts are traded on an organized exchange.
- D. A futures contract is a type of forward contract but futures contracts have highly standardized contract terms.

6. The lower bound for an American call option compared to a European call option with the same underlying, exercise date and time to maturity is:

- A. always equal to the lower bound for the European call.
- B. equal to or less than the lower bound for the European call.
- C. equal to or more than the lower bound for the European call.
- D. either more or less than the lower bound for the European call depending on whether they are in-the-money or out-of-the-money.



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5. Which of the following statements is most accurate with respect to forward and futures contracts?

- A. A forward contract refers to a futures contract traded outside the U.S.
- B. A forward contract is another term for, and is identical to, a futures contract.
- C. A forward contract is a type of futures contract but forward contracts are traded on an organized exchange.
- D. A futures contract is a type of forward contract but futures contracts have highly standardized contract terms.

Correct Answer: D.....**LOS: Reading 72-a**

A forward contract is the general term applied to an agreement that leads to an exchange of assets at a later time. A futures contract has specific contract terms and is traded on a recognized exchange with the contract guaranteed by a clearing house.

Reference: CFA® Program Curriculum, Volume 6, pp. 49-50.

6. The lower bound for an American call option compared to a European call option with the same underlying, exercise date and time to maturity is:

- A. always equal to the lower bound for the European call.
- B. equal to or less than the lower bound for the European call.
- C. equal to or more than the lower bound for the European call.
- D. either more or less than the lower bound for the European call depending on whether they are in-the-money or out-of-the-money.

Correct Answer: A.....**LOS: Reading 73-h**

The lower bound for a European call is either zero or the underlying price minus the present value of the exercise price, whichever is greater. Since an American call option is worth the same or more than a European call the lower bound is the same.

Reference: CFA® Program Curriculum, Volume 6, pp. 100-105.



7. The value of a call option on a stock at expiration is:
- A. the greater of (i) zero and (ii) the stock price minus the exercise price.
 - B. the greater of (i) zero and (ii) the exercise price minus the stock price.
 - C. the smaller of (i) zero and (ii) the stock price minus the exercise price.
 - D. the smaller of (i) zero and (ii) the exercise price minus the stock price.
-

8. If an investor wants to protect his stock portfolio against losses he could:
- A. sell calls on the stock market index.
 - B. buy puts on the stock market index.
 - C. sell puts on the stock market index.
 - D. buy calls on the stock market index.



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7. The value of a call option on a stock at expiration is:
- A. the greater of (i) zero and (ii) the stock price minus the exercise price.
 - B. the greater of (i) zero and (ii) the exercise price minus the stock price.
 - C. the smaller of (i) zero and (ii) the stock price minus the exercise price.
 - D. the smaller of (i) zero and (ii) the exercise price minus the stock price.

Correct Answer: A **LOS: Reading 73-e**

At expiration the holder of the call option can either exercise the option or let it lapse. If the stock price has ended higher than the exercise price then the investor will exercise the option since he can sell the stock in the market at a higher price. If the stock price has fallen below the exercise price he will let the option lapse worthless.

Reference: CFA® Program Curriculum, Volume 6, pp. 96-100.

8. If an investor wants to protect his stock portfolio against losses he could:
- A. sell calls on the stock market index.
 - B. buy puts on the stock market index.
 - C. sell puts on the stock market index.
 - D. buy calls on the stock market index.

Correct Answer: B **LOS: Reading 75-b**

If he buys put options and the market falls he will make a profit on the put options. This will offset his loss on the stock portfolio.

Reference: CFA® Program Curriculum, Volume 6, pp. 162-165.



9. In the case that a stock price falls below the exercise price of a call option at the expiration of the option, then:

- A. the profit made by the writer of the option is larger than the loss made by the buyer.
 - B. the loss made by the writer of the option is larger than the profit made by the buyer.
 - C. the profit made by the writer of the option is the same as the loss made by the buyer.
 - D. we need more information to know whether the writer or the buyer of the option would make a profit.
-

10. If a trader has opened a position by buying a call option, he can close the position by:

- A. selling a put.
- B. buying a put.
- C. buying a call.
- D. selling a call.



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9. In the case that a stock price falls below the exercise price of a call option at the expiration of the option, then:

- A. the profit made by the writer of the option is larger than the loss made by the buyer.
- B. the loss made by the writer of the option is larger than the profit made by the buyer.
- C. the profit made by the writer of the option is the same as the loss made by the buyer.
- D. we need more information to know whether the writer or the buyer of the option would make a profit.

Correct Answer: CLOS: Reading 75-a

Options are a zero-sum gain, the profit (loss) made by the writer of the option will equal the loss (profit) made by the buyer.

Reference: CFA® Program Curriculum, Volume 6, pp. 149-153.

10. If a trader has opened a position by buying a call option, he can close the position by:

- A. selling a put.
- B. buying a put.
- C. buying a call.
- D. selling a call.

Correct Answer: DLOS: Reading 73-a

The 'opposite' of buying a call is simply selling the same call option.

Reference: CFA® Program Curriculum, Volume 6, pp. 80-82.



11. Which of the following combination of factors will tend to lead to the highest price of a put option:

- A. a low strike price and a long time to expiry.
- B. a low strike price and a short time to expiry.
- C. a high strike price and a short time to expiry.
- D. a high strike price and a long time to expiry.

12. Which of the following statements is most accurate concerning two options that have the same terms except that one is an American option and one is a European option?

- A. The European option can be exercised at any point before expiry and is worth at least as much as the American option.
- B. The American option can be exercised at any point before expiry and is worth at least as much as the European option.
- C. The American option can be exercised at any point before expiry and is worth less than, or the same as, the European option.
- D. The European option can be exercised at any point before expiry and is worth less than, or the same as, the American option.



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11. Which of the following combination of factors will tend to lead to the highest price of a put option:

- A. a low strike price and a long time to expiry.
- B. a low strike price and a short time to expiry.
- C. a high strike price and a short time to expiry.
- D. a high strike price and a long time to expiry.

Correct Answer: D..... **LOS: Reading 73-i**

The profit on a put option will be determined by the difference between the stock price and the strike price: the higher the strike price the higher the potential profit. A longer time to expiry gives the holder a longer period in which to sell the shares at the exercise price so it will be worth more.

Reference: CFA® Program Curriculum, Volume 6, pp. 95-100.

12. Which of the following statements is most accurate concerning two options that have the same terms except that one is an American option and one is a European option?

- A. The European option can be exercised at any point before expiry and is worth at least as much as the American option.
- B. The American option can be exercised at any point before expiry and is worth at least as much as the European option.
- C. The American option can be exercised at any point before expiry and is worth less than, or the same as, the European option.
- D. The European option can be exercised at any point before expiry and is worth less than, or the same as, the American option.

Correct Answer: B..... **LOS: Reading 73-a**

Since an American option can be exercised at any time up to expiry, whereas a European option can only be exercised at expiry, an American option gives the holder more flexibility and therefore must be worth more (or the same).

Reference: CFA® Program Curriculum, Volume 6, p. 81.



13. There is a European put option expiring in 60 days, the exercise price is 110 and the underlying is trading at 100. The risk-free rate is 6%, the lower bound on the option value is closest to:

- A. 0.00.
- B. 3.77.
- C. 8.95.
- D. 10.00.

14. An investor holds an asset with a current price of 120; a put option is purchased with an exercise price of 105. If the breakeven point for the hedged position is an asset price of 135 at expiration, then the value of the put option at the time of purchase must have been:

- A. 5.
- B. 15.
- C. 20.
- D. 30.



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13. There is a European put option expiring in 60 days, the exercise price is 110 and the underlying is trading at 100. The risk-free rate is 6%, the lower bound on the option value is closest to:

- A. 0.00.
- B. 3.77.
- C. 8.95.
- D. 10.00.

Correct Answer: C LOS: Reading 73-h

The lower bound is given by:

$$p_0 \geq \text{Max} [0, X/(1 + r)^T - S_0] = \text{Max} [0, 110/(1.06)^{0.1644} - 100] = 8.95$$

Reference: CFA® Program Curriculum, Volume 6, pp. 100-105.

14. An investor holds an asset with a current price of 120; a put option is purchased with an exercise price of 105. If the breakeven point for the hedged position is an asset price of 135 at expiration, then the value of the put option at the time of purchase must have been:

- A. 5.
- B. 15.
- C. 20.
- D. 30.

Correct Answer: B LOS: Reading 75-b

Breakeven is when:

$$\text{Cost of put option} = \text{change in value of asset} + \text{value of put option} = (135 - 120) + 0 = 15$$

Reference: CFA® Program Curriculum, Volume 6, pp. 14-158.



15. The swap markets:

- A. are highly regulated.
- B. are mainly used by individuals.
- C. developed in the last five years.
- D. offer an effective way of hedging.

16. An investor deposits an initial margin of \$40,000 for a futures trade and the following day makes a \$15,000 loss on the trade. If the maintenance requirement is \$30,000 then he must deposit a variation margin of:

- A. \$0.
- B. \$5,000.
- C. \$10,000.
- D. \$15,000.



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15. The swap markets:

- A. are highly regulated.
- B. are mainly used by individuals.
- C. developed in the last five years.
- D. offer an effective way of hedging.

Correct Answer: D.....**LOS: Reading 74-a**

The swap markets are mainly used by institutions, are virtually unregulated, and have been active for a long period. They can be used for hedging, e.g. interest rate swaps are used to hedge interest rate risk.

Reference: CFA® Program Curriculum, Volume 6, pp. 126-128.

16. An investor deposits an initial margin of \$40,000 for a futures trade and the following day makes a \$15,000 loss on the trade. If the maintenance requirement is \$30,000 then he must deposit a variation margin of:

- A. \$0.
- B. \$5,000.
- C. \$10,000.
- D. \$15,000.

Correct Answer: D.....**LOS: Reading 72-b**

The variation margin must be paid if the investor's margin balance falls below the maintenance requirement and must bring the margin balance back to the initial level. In this case the balance has fallen to \$25,000 so he must make up the difference of \$15,000 in variation margin.

Reference: CFA® Program Curriculum, Volume 6, pp. 55-60.



17. A series of cash settled forward contracts is:

- A. a swap.
- B. an option.
- C. a futures option.
- D. a futures contract.

18. An investor holds 1,000 shares of ABC Corp. and the current stock price is \$45. He buys 1,000 put options with an exercise price of \$46 at a premium of \$6 each. If the stock price falls to \$35 at the expiration date then the value of his insured portfolio is:

- A. \$5,000.
- B. \$40,000.
- C. \$46,000.
- D. \$51,000.



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17. A series of cash settled forward contracts is:

- A. a swap.
- B. an option.
- C. a futures option.
- D. a futures contract.

Correct Answer: A **LOS: Reading 70-b**

A swap is an agreement between two parties to exchange a series of cash flows in the future. It is dealt OTC so is effectively a series of cash settled forward contracts.

Reference: CFA® Program Curriculum, Volume 6, pp. 11-12.

18. An investor holds 1,000 shares of ABC Corp. and the current stock price is \$45. He buys 1,000 put options with an exercise price of \$46 at a premium of \$6 each. If the stock price falls to \$35 at the expiration date then the value of his insured portfolio is:

- A. \$5,000.
- B. \$40,000.
- C. \$46,000.
- D. \$51,000.

Correct Answer: B..... **LOS: Reading 75-b**

The value of the portfolio will be $\$35,000 - \$6,000$ (option premium) + $\$11,000$ (profit on exercising option) = $\$40,000$ i.e. the minimum value is the exercise price less the premium.

Reference: CFA® Program Curriculum, Volume 6, pp. 158-162.



19. The least appropriate way to close a futures position is by:

- A. offset.
- B. exercise.
- C. delivery.
- D. exchange-for-physicals.

20. Daily settlement in the futures market refers to:

- A. a futures contract that expires on a specific day.
- B. closing prices which are reported daily by the exchange.
- C. when a trader enters into a futures contract he has one day to deposit the initial margin.
- D. gains and losses are added or deducted from the margin position held with a broker on a daily basis.



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19. The least appropriate way to close a futures position is by:

- A. offset.
- B. exercise.
- C. delivery.
- D. exchange-for-physicals.

Correct Answer: B..... LOS: Reading 72-d

Exercise is a term used for options.

Reference: CFA® Program Curriculum, Volume 6, pp. 60-62.

20. Daily settlement in the futures market refers to:

- A. a futures contract that expires on a specific day.
- B. closing prices which are reported daily by the exchange.
- C. when a trader enters into a futures contract he has one day to deposit the initial margin.
- D. gains and losses are added or deducted from the margin position held with a broker on a daily basis.

Correct Answer: D..... LOS: Reading 72-c

A is not correct since futures contracts are often only available which expire at three monthly intervals. C is not correct since the initial margin must be deposited before the trade is done.

Reference: CFA® Program Curriculum, Volume 6, pp. 55-56.



21. An investor purchases a call option on a stock, with an exercise price of \$8.00, at a premium of \$0.70 and writes a call option on the same stock, with an exercise price of \$9.00, at a premium of \$0.10. Both options have the same expiration date. Which of the following statements is most accurate regarding the profit/loss the investor makes?

- A. The investor has the risk of making an unlimited loss.
 - B. The investor has the potential to make unlimited gains.
 - C. If the stock price rises sharply the investor will make a profit.
 - D. The breakeven point of the transaction is a stock price of \$8.80.
-

22. A trader writes a put option on a stock which has a current price of \$50, the option price is \$5 and the exercise price is \$52. At expiration the stock closes at \$54. The intrinsic value of the option at expiration is:

- A. \$0.
- B. \$2.
- C. \$4.
- D. \$5.



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21. An investor purchases a call option on a stock, with an exercise price of \$8.00, at a premium of \$0.70 and writes a call option on the same stock, with an exercise price of \$9.00, at a premium of \$0.10. Both options have the same expiration date. Which of the following statements is most accurate regarding the profit/loss the investor makes?

- A. The investor has the risk of making an unlimited loss.
- B. The investor has the potential to make unlimited gains.
- C. If the stock price rises sharply the investor will make a profit.
- D. The breakeven point of the transaction is a stock price of \$8.80.

Correct Answer: CLOS: Reading 75-a

A and B are not correct since if the stock price falls sharply neither option will be exercised so the loss is the difference in premium of \$0.60. If the stock price rises, then the loss on the short call will be more than made up by the profit on the long call, but the maximum gain will $\$1.00 - \$0.70 + \$0.10 = \0.40 .

D is not correct since the breakeven point is \$8.60, at this stock price the loss on the long call of \$0.10 is just covered by the premium received from the short call.

If the stock price rises then the investor will make a profit since the profit on the long call will be more than the loss on the short call (due to the lower exercise price) and the gain will $\$1.00 - \$0.70 + \$0.10 = \0.40 .

Reference: CFA® Program Curriculum, Volume 6, pp. 151-158.

22. A trader writes a put option on a stock which has a current price of \$50, the option price is \$5 and the exercise price is \$52. At expiration the stock closes at \$54. The intrinsic value of the option at expiration is:

- A. \$0.
- B. \$2.
- C. \$4.
- D. \$5.

Correct Answer: ALOS: Reading 73-a

The intrinsic value of a put option is the greater of zero or the (exercise price – strike price). The exercise price is less than the strike price so the intrinsic value is zero.

Reference: CFA® Program Curriculum, Volume 6, pp. 96-100.



23. European options are available on an underlying security that is priced at \$30, the exercise price is \$25 and the options expire in six months. The risk-free rate is 10% and the call option is priced at \$7 and the put option at \$2.

- A. Put-call parity holds.
 - B. A synthetic put option is not attractively priced.
 - C. It is more attractive to purchase a synthetic put option than a put option.
 - D. It is more attractive to purchase a synthetic call option than a call option.
-

24. Party A enters into a fixed-for-fixed currency swap with Party B. Party A holds U.S.\$ 10 million and switches them into Party B's Pounds Sterling (£). The swap is done at the current exchange rate of \$1.60 = £1. Interest rates in the U.S. are 7% and in the U.K. are 6%. Annual interest payments are made. The final payment of the swap from Party A to Party B will be:

- A. \$0.7 million.
- B. \$10.7 million.
- C. £0.375 million.
- D. £6.625 million.



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23. European options are available on an underlying security that is priced at \$30, the exercise price is \$25 and the options expire in six months. The risk-free rate is 10% and the call option is priced at \$7 and the put option at \$2.

- A. Put-call parity holds.
- B. A synthetic put option is not attractively priced.
- C. It is more attractive to purchase a synthetic put option than a put option.
- D. It is more attractive to purchase a synthetic call option than a call option.

Correct Answer: C **LOS: Reading 73-j**

$$c_0 - S_0 + X/(1 + r)^T = \$8 - \$30 + \$25/(1.10)^{0.5} = \$1.84$$

This is less than the price of the put option so it is more attractive to purchase a synthetic put. The call option is effectively under-priced.

Reference: CFA® Program Curriculum, Volume 6, pp. 108-113.

24. Party A enters into a fixed-for-fixed currency swap with Party B. Party A holds U.S.\$ 10 million and switches them into Party B's Pounds Sterling (£). The swap is done at the current exchange rate of \$1.60 = £1. Interest rates in the U.S. are 7% and in the U.K. are 6%. Annual interest payments are made. The final payment of the swap from Party A to Party B will be:

- A. \$0.7 million.
- B. \$10.7 million.
- C. £0.375 million.
- D. £6.625 million.

Correct Answer: D **LOS: Reading 74-b**

The final payment will consist of the return of principal of £6.25 million (\$10 million equivalent) plus the final interest payment of 0.375 million (6% of £6.25 million).

Reference: CFA® Program Curriculum, Volume 6, pp. 130-134.



25. The profit (or loss) on a short position in a call option on a stock at expiration is:
- A. the option premium plus the greater of (i) zero and (ii) the exercise price minus the stock price.
 - B. the option premium plus the greater of (i) zero and (ii) the stock price minus the exercise price.
 - C. the option premium minus the greater of (i) zero and (ii) the exercise price minus the stock price.
 - D. the option premium minus the greater of (i) zero and (ii) the stock price minus the exercise price.
-
26. A U.S. company A can borrow dollars at a lower interest rate in the U.S. than a Japanese company B can borrow dollars in the U.S., conversely the Japanese company can borrow Yen at a lower interest rate than the U.S. company can borrow Yen in Japan. If company A needs to borrow in Yen and company B needs to borrow in dollars both companies would reduce their borrowing costs by:
- A. borrowing in their local markets and company A enters into a currency swap and swaps the dollars for Yen with company B.
 - B. borrowing in their local markets and company A enters into a currency swap and swaps the Yen for dollars with company B.
 - C. company A borrows in Japan and company B borrows in the U.S., and company A enters into a currency swap and swaps the dollars for Yen with company B.
 - D. company A borrows in Japan and company B borrows in the U.S., and company A enters into a currency swap and swaps the Yen for dollars with company B.



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25. The profit (or loss) on a short position in a call option on a stock at expiration is:

- A. the option premium plus the greater of (i) zero and (ii) the exercise price minus the stock price.
- B. the option premium plus the greater of (i) zero and (ii) the stock price minus the exercise price.
- C. the option premium minus the greater of (i) zero and (ii) the exercise price minus the stock price.
- D. the option premium minus the greater of (i) zero and (ii) the stock price minus the exercise price.

Correct Answer: D.....**LOS: Reading 75-a**

At expiration the holder will either exercise the option or let it lapse. If the stock price has ended higher than the exercise price then the holder will exercise the option and the seller of the option will make a loss of the exercise price minus the stock price, offset by the premium that he received. If the stock price has fallen below the exercise price the option will lapse and the seller of the option will make a profit of the premium that he collected.

Reference: CFA® Program Curriculum, Volume 6, pp. 151-158.

26. A U.S. company A can borrow dollars at a lower interest rate in the U.S. than a Japanese company B can borrow dollars in the U.S., conversely the Japanese company can borrow Yen at a lower interest rate than the U.S. company can borrow Yen in Japan. If company A needs to borrow in Yen and company B needs to borrow in dollars both companies would reduce their borrowing costs by:

- A. borrowing in their local markets and company A enters into a currency swap and swaps the dollars for Yen with company B.
- B. borrowing in their local markets and company A enters into a currency swap and swaps the Yen for dollars with company B.
- C. company A borrows in Japan and company B borrows in the U.S., and company A enters into a currency swap and swaps the dollars for Yen with company B.
- D. company A borrows in Japan and company B borrows in the U.S., and company A enters into a currency swap and swaps the Yen for dollars with company B.

Correct Answer: A.....**LOS: Reading 74-b**

Since each company can borrow more cheaply in its local market they should do this and then swap the currencies to meet their borrowing requirements.

Reference: CFA® Program Curriculum, Volume 6, pp. 130-134.



27. If a seller of a call option deposits the underlying shares with his broker this is:

- A. speculation.
- B. a naked call.
- C. a covered put.
- D. a covered call.

28. The value of a stock is \$20 and a trader writes a call option with a value of \$3 and an exercise price of \$22. The stock price at expiration that will be the trader's breakeven point is:

- A. \$17.
- B. \$19.
- C. \$23.
- D. \$25.



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27. If a seller of a call option deposits the underlying shares with his broker this is:

- A. speculation.
- B. a naked call.
- C. a covered put.
- D. a covered call.

Correct Answer: D..... **LOS: Reading 75-b**

A covered call means that the broker has the shares available for delivery if the buyer of the call option decides to exercise his option.

Reference: CFA® Program Curriculum, Volume 6, pp. 158-162.



28. The value of a stock is \$20 and a trader writes a call option with a value of \$3 and an exercise price of \$22. The stock price at expiration that will be the trader's breakeven point is:

- A. \$17.
- B. \$19.
- C. \$23.
- D. \$25.

Correct Answer: D **LOS:** Reading 75-a

$$0 = \text{premium} - \text{maximum } [0, (S_T - X)]$$

$$0 = \$3 - (S - \$22)$$

$$S = \$25$$

Reference: CFA® Program Curriculum, Volume 6, pp. 151-158.



Study Session 18: Alternative Investments:

Due to diversification benefits and higher expectations of investment returns, investors are increasingly turning to alternative investments. This study session describes the common types of alternative investments, methods for their valuation, unique risks and opportunities associated with them, and the relation between alternative investments and traditional investments.

Although finding a single definition of an “alternative” investment is difficult, certain features (e.g., limited liquidity, infrequent valuations, and unique legal structures) are typically associated with alternative investments. This study session discusses these features and how to evaluate their impact on expected returns and investment decisions in more detail. The reading provides an overview of the major categories of alternative investments, including real estate, private equity, venture capital, hedge funds, closely held companies, distressed securities, and commodities.

Each one of these categories has several unique characteristics, and the readings discuss valuation methods for illiquid assets (such as direct real estate or closely held companies), performance measures for private equity and venture capital investments, differences between various hedge fund strategies, and implementation vehicles for investments in alternative assets.

Reading 76: Alternative Investments



1. Which of the following statements best describes real estate markets? Real estate markets are:
 - A. inefficient since prices are dependent on many different factors.
 - B. efficient since most real estate is heavily promoted prior to sale.
 - C. efficient since most real estate is sold after the price has been negotiated.
 - D. inefficient since there is no central market place and information is not circulated quickly between investors.
-
2. Early-stage venture capital investments are least likely to be:
 - A. illiquid.
 - B. invested in relatively new companies.
 - C. invested in companies that will require further financing.
 - D. invested in companies that are looking to expand their commercial production.



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1. Which of the following statements best describes real estate markets? Real estate markets are:
- A. inefficient since prices are dependent on many different factors.
 - B. efficient since most real estate is heavily promoted prior to sale.
 - C. efficient since most real estate is sold after the price has been negotiated.
 - D. inefficient since there is no central market place and information is not circulated quickly between investors.

Correct Answer: D..... **LOS: Reading 76-d**

Real estate markets are regarded as informationally inefficient, which provides opportunities for investors who can identify mispriced properties.

Reference: CFA® Program Curriculum, Volume 6, pp. 188-189.

2. Early-stage venture capital investments are least likely to be:
- A. illiquid.
 - B. invested in relatively new companies.
 - C. invested in companies that will require further financing.
 - D. invested in companies that are looking to expand their commercial production.

Correct Answer: D..... **LOS: Reading 76-g**

Early-stage financing is used to help companies move into operations and occurs before commercial production has started.

Reference: CFA® Program Curriculum, Volume 6, pp. 201-202.



3. The market cap rate that is used to value a property:
- A. is the estimated market value of the property.
 - B. is the appreciation in market value over the previous one-year period.
 - C. is the operating expense incurred in owning and managing the property.
 - D. reflects the rate of return required by investors in a comparable property.
-
4. Exchange Traded Funds (ETFs) have 'in kind' redemption. This means that:
- A. investors are encouraged to redeem for cash by the offer of a cash incentive.
 - B. an ETF can redeem shares in its underlying portfolio by giving two days' notice.
 - C. an investor will receive the cash equivalent to the net asset value of the shares they hold when they redeem them.
 - D. an authorized participant can redeem shares and receive a portfolio of shares that was used to track the index.



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3. The market cap rate that is used to value a property:
- A. is the estimated market value of the property.
 - B. is the appreciation in market value over the previous one-year period.
 - C. is the operating expense incurred in owning and managing the property.
 - D. reflects the rate of return required by investors in a comparable property.

Correct Answer: D..... **LOS: Reading 76-f**

The market cap rate is the rate that is used to discount the net operating cash flows from the property to arrive at the present value.

Reference: CFA® Program Curriculum, Volume 6, pp. 193-194.

4. Exchange Traded Funds (ETFs) have 'in kind' redemption. This means that:
- A. investors are encouraged to redeem for cash by the offer of a cash incentive.
 - B. an ETF can redeem shares in its underlying portfolio by giving two days' notice.
 - C. an investor will receive the cash equivalent to the net asset value of the shares they hold when they redeem them.
 - D. an authorized participant can redeem shares and receive a portfolio of shares that was used to track the index.

Correct Answer: D..... **LOS: Reading 76-b**

When an authorized participant or market maker redeems shares he receives a basket of the underlying securities rather than cash.

Reference: CFA® Program Curriculum, Volume 6, pp. 180-184.



5. The advantages of investing in a fund of hedge funds for an investor include:

- A. lower fees.
- B. superior returns.
- C. greater transparency.
- D. diversification reducing the volatility of returns.

6. Hedge funds usually:

- A. hedge out all market and currency risks.
- B. use leverage to increase the returns from arbitrage strategies.
- C. take short positions to enhance returns when prices are rising.
- D. avoid counterparty risk by only dealing in exchange-traded derivatives.



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5. The advantages of investing in a fund of hedge funds for an investor include:

- A. lower fees.
- B. superior returns.
- C. greater transparency.
- D. diversification reducing the volatility of returns.

Correct Answer: D..... **LOS: Reading 76-j**

A fund of hedge funds will invest across a number of different hedge funds which often follow different strategies so the volatility of the fund of funds' returns is reduced below the volatility of the individual hedge funds' returns.

Reference: CFA® Program Curriculum, Volume 6, pp. 214-215.

6. Hedge funds usually:

- A. hedge out all market and currency risks.
- B. use leverage to increase the returns from arbitrage strategies.
- C. take short positions to enhance returns when prices are rising.
- D. avoid counterparty risk by only dealing in exchange-traded derivatives.

Correct Answer: B..... **LOS: Reading 76-k**

Hedge funds have the flexibility to borrow to increase their returns. This is a strategy often used by arbitrage funds. They take short positions to enhance returns when prices are falling, many strategies do not hedge out all market and currency exposure (despite their name) and they frequently use OTC derivatives.

Reference: CFA® Program Curriculum, Volume 6, pp. 217-219.



7. In the U.S. most equity real estate investment trusts (REITs):
- A. are open-end investment companies.
 - B. are only available to institutional investors.
 - C. make mortgage loans to real estate investors.
 - D. have shares which are traded on a stock market.
-
8. The Sharpe ratio for hedge fund indexes is:
- A. often understated due to survivorship bias.
 - B. generally higher than those for equity and bond indexes.
 - C. a suitable measure of risk-adjusted return since returns are not always symmetrically distributed.
 - D. biased since the standard deviation of hedge funds returns is higher than those of equities, pushing down the Sharpe ratios of hedge funds.



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7. In the U.S. most equity real estate investment trusts (REITs):

- A. are open-end investment companies.
- B. are only available to institutional investors.
- C. make mortgage loans to real estate investors.
- D. have shares which are traded on a stock market.

Correct Answer: D.....**LOS: Reading 76-e**

A REIT is a closed-end investment company that is usually listed on a stock market making it available to retail and institutional investors.

D is a description of a mortgage REIT.

Reference: CFA® Program Curriculum, Volume 6, p. 190.

8. The Sharpe ratio for hedge fund indexes is:

- A. often understated due to survivorship bias.
- B. generally higher than those for equity and bond indexes.
- C. a suitable measure of risk-adjusted return since returns are not always symmetrically distributed.
- D. biased since the standard deviation of hedge funds returns is higher than those of equities, pushing down the Sharpe ratios of hedge funds.

Correct Answer: B..... **LOS: Reading 76-l**

Survivorship bias means that returns are overstated and risk understated, and hence Sharpe ratios are overstated.

If a hedge fund invests in options or other derivatives, standard deviation, and hence the Sharpe ratio, may underestimate the risk of big losses.

The standard deviation of hedge funds returns is lower than those of equities, so D is not correct.

Reference: CFA® Program Curriculum, Volume 6, pp. 220-221.



9. A property was purchased one year ago for \$175,000. If the annual net operating income is \$24,000 and the market capitalization rate is 12% then, using the income approach, the value of the property is:

- A. \$196,000.
- B. \$200,000.
- C. \$220,000.
- D. \$288,000.

10. The discounted after-tax cash flow approach to real estate valuation is often considered more relevant than the market value approach for all of the following reasons except:

- A. it is not influenced by the tax status of the investor.
- B. it uses forecasts for factors affecting real estate values.
- C. it looks at the individual return requirements of the investor.
- D. it takes into account the leverage used to purchase real estate.



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9. A property was purchased one year ago for \$175,000. If the annual net operating income is \$24,000 and the market capitalization rate is 12% then, using the income approach, the value of the property is:

- A. \$196,000.
- B. \$200,000.
- C. \$220,000.
- D. \$288,000.

Correct Answer: B..... **LOS: Reading 76-f**

Market value= net operating income/market capitalization rate
= \$24,000/0.12 = \$200,000

Reference: CFA® Program Curriculum, Volume 6, pp. 193-194.

10. The discounted after-tax cash flow approach to real estate valuation is often considered more relevant than the market value approach for all of the following reasons except:

- A. it is not influenced by the tax status of the investor.
- B. it uses forecasts for factors affecting real estate values.
- C. it looks at the individual return requirements of the investor.
- D. it takes into account the leverage used to purchase real estate.

Correct Answer: A..... **LOS: Reading 76-f**

The discounted cash flow approach takes into account the cash flows after tax for the investor.

Reference: CFA® Program Curriculum, Volume 6, pp. 194-198.



11. The least appropriate reason why after-tax cash flows rather than net operating income are used in the discounted cash flow approach to real estate valuation is:

- A. investors usually pay federal taxes.
 - B. property taxes are payable in many locations.
 - C. different investors have different costs of borrowing.
 - D. many investors use outside finance for real estate purchases.
-

12. Real estate appraisal refers to:

- A. investigating the location of the property.
- B. checking the quality of construction of a property.
- C. examining the legal documentation concerning a property.
- D. the process of establishing the current market value of a property.



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11. The least appropriate reason why after-tax cash flows rather than net operating income are used in the discounted cash flow approach to real estate valuation is:

- A. investors usually pay federal taxes.
- B. property taxes are payable in many locations.
- C. different investors have different costs of borrowing.
- D. many investors use outside finance for real estate purchases.

Correct Answer: B..... **LOS: Reading 76-f**

Property taxes would be deducted in the calculations of both net operating income and after-tax cash flows.

Reference: CFA® Program Curriculum, Volume 6, pp. 193-198.

12. Real estate appraisal refers to:

- A. investigating the location of the property.
- B. checking the quality of construction of a property.
- C. examining the legal documentation concerning a property.
- D. the process of establishing the current market value of a property.

Correct Answer: D..... **LOS: Reading 76-e**

Real estate appraisal establishes the value of a property which might include investigating the location, checking the quality of construction and legal documentation.

Reference: CFA® Program Curriculum, Volume 6, pp. 190-191.



13. An investor calculates that the net operating income from a property will be \$40,000 for each of the next two years. Depreciation expense will be \$8,000 per year and her marginal tax rate is 40%. She will pay for the property with cash rather than using a mortgage. At the end of two years she believes that she will be able to sell the property for \$200,000 net of tax. If the investor's required rate of return is 15%, the value of the property to the investor is closest to:

- A. \$182,443.
- B. \$195,448.
- C. \$216,257.
- D. \$271,758.

14. An investment company is least likely to:

- A. sell its shares to several investors.
- B. offer investment advisory services to investors.
- C. appoint an investment manager to manage its assets.
- D. have its assets invested in securities that are referred to as a fund.



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13. An investor calculates that the net operating income from a property will be \$40,000 for each of the next two years. Depreciation expense will be \$8,000 per year and her marginal tax rate is 40%. She will pay for the property with cash rather than using a mortgage. At the end of two years she believes that she will be able to sell the property for \$200,000 net of tax. If the investor's required rate of return is 15%, the value of the property to the investor is closest to:

- A. \$182,443.
- B. \$195,448.
- C. \$216,257.
- D. \$271,758.

Correct Answer: B.....LOS: Reading 76-f

The net income each year is $(\$40,000 - \$8,000)0.60 = \$19,200$ so the after-tax cash flow is $\$19,200 + \$8,000 = \$27,200$ in the first year. In the second year we need to add the expected sale proceeds of \$200,000 .

The cash flows discount back to give a present value of:

$$\frac{\$27,200}{1.15} + \frac{\$227,200}{1.15^2} = \$23,652 + \$171,796 = \$195,448$$

Reference: CFA® Program Curriculum, Volume 6, pp. 194-198.

14. An investment company is least likely to:

- A. sell its shares to several investors.
- B. offer investment advisory services to investors.
- C. appoint an investment manager to manage its assets.
- D. have its assets invested in securities that are referred to as a fund.

Correct Answer: B.....LOS: Reading 76-a

An investment company is the name for a company that receives cash from a number of investors, uses this money to invest in securities and is often managed by a professional fund manager. It is not the same as an investment management or advisory company.

Reference: CFA® Program Curriculum, Volume 6, pp. 177.



15. At the beginning of the year a hedge fund currently has assets of \$500 million and the fee structure is a fixed fee of 1% of the portfolio value at the beginning of the year plus a 20% incentive fee. The incentive fee is applied to the annual gross return in excess of the previous high watermark or maximum value since inception. The maximum value was two years ago when the value was \$520 million. If the gross return over the next year is 10% the fee earned by the manager is:

- A. \$6 million.
- B. \$10 million.
- C. \$11 million.
- D. \$15 million.

16. Which of the following is the fee that is least likely to be charged by an investment company?

- A. Redemption fee.
- B. Deferred sales load.
- C. Annual management fee.
- D. A premium to the net asset value.



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15. At the beginning of the year a hedge fund currently has assets of \$500 million and the fee structure is a fixed fee of 1% of the portfolio value at the beginning of the year plus a 20% incentive fee. The incentive fee is applied to the annual gross return in excess of the previous high watermark or maximum value since inception. The maximum value was two years ago when the value was \$520 million. If the gross return over the next year is 10% the fee earned by the manager is:

- A. \$6 million.
- B. \$10 million.
- C. \$11 million.
- D. \$15 million.

Correct Answer: C **LOS: Reading 76-i**

Fixed fee = $1\% \times \$500 \text{ million} = \5 million

The new value of the fund is \$550 million, which is \$30 million above the high watermark so the incentive fee is $20\% \times \$30 \text{ million} = \6 million

Total fee = \$5 million + \$6 million = \$11 million

Reference: CFA® Program Curriculum, Volume 6, pp. 210-211.

16. Which of the following is the fee that is least likely to be charged by an investment company?

- A. Redemption fee.
- B. Deferred sales load.
- C. Annual management fee.
- D. A premium to the net asset value.

Correct Answer: D **LOS: Reading 76-a**

The premium to net asset value refers to a closed-end fund which is trading in the market at a premium above its net asset value; this premium goes to the seller of the mutual fund.

Reference: CFA® Program Curriculum, Volume 6, pp. 177-179.



17. Which of the following is the least accurate description of a characteristic of the real estate market?

- A. Infrequent transactions.
 - B. Each property is unique.
 - C. There is no central market place.
 - D. Supply and demand are in balance.
-

18. Start-up financing from a venture capital company is for:

- A. capital for expansion of a business.
- B. market research of a new product idea.
- C. starting commercial production and sales.
- D. product development and initial marketing of a product before it is sold commercially.



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17. Which of the following is the least accurate description of a characteristic of the real estate market?

- A. Infrequent transactions.
- B. Each property is unique.
- C. There is no central market place.
- D. Supply and demand are in balance.

Correct Answer: D..... LOS: Reading 76-d

It takes time for supply to adjust to changes in demand so they usually are not in balance.

Reference: CFA® Program Curriculum, Volume 6, pp. 188-189.

18. Start-up financing from a venture capital company is for:

- A. capital for expansion of a business.
- B. market research of a new product idea.
- C. starting commercial production and sales.
- D. product development and initial marketing of a product before it is sold commercially.

Correct Answer: D..... LOS: Reading 76-g

- A is second or third-stage financing.
- B refers to seed financing.
- C is first-stage financing.

Reference: CFA® Program Curriculum, Volume 6, pp. 201-202.



19. Shares in a closed-end investment company usually trade at:

- A. the net asset value of the shares.
 - B. the net asset value less the liabilities of the fund.
 - C. a discount or premium to the net asset value of the shares.
 - D. the net asset value of the shares plus the front-end load for a purchase or the net asset value of the shares less the back-end load for a sale.
-

20. A hedge fund charges a 0.5% base management fee plus 20% of any gross return above the risk-free rate. The gross return on the fund is 30% and the risk-free rate is 5%. The net return for an investor is closest to:

- A. 5.5%.
- B. 19.5%.
- C. 23.5%.
- D. 24.5%.



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19. Shares in a closed-end investment company usually trade at:

- A. the net asset value of the shares.
- B. the net asset value less the liabilities of the fund.
- C. a discount or premium to the net asset value of the shares.
- D. the net asset value of the shares plus the front-end load for a purchase or the net asset value of the shares less the back-end load for a sale.

Correct Answer: C **LOS: Reading 76-a**

Historically closed-end funds have generally traded at a discount. The price is set by supply and demand for the shares. Open-end funds trade at NAV, plus or minus sales and redemption charges.

Reference: CFA® Program Curriculum, Volume 6, p. 177.

20. A hedge fund charges a 0.5% base management fee plus 20% of any gross return above the risk-free rate. The gross return on the fund is 30% and the risk-free rate is 5%. The net return for an investor is closest to:

- A. 5.5%.
- B. 19.5%.
- C. 23.5%.
- D. 24.5%.

Correct Answer: D **LOS: Reading 76-i**

The fee = $0.5\% + 20\%(30\% - 5\%) = 5.5\%$

Net return = $30\% - 5.5\% = 24.5\%$

Reference: CFA® Program Curriculum, Volume 6, pp. 210-211.



21. Which of the following factors is the least likely to affect net operating income for a property?

- A. Rental income.
- B. Mortgage interest costs.
- C. Property management costs.
- D. Repair and maintenance costs.

22. If a fund is to invest in illiquid assets there will be advantages in establishing it as a closed-end fund since:

- A. the fund itself will be more liquid.
- B. the managers can charge a higher front-end load.
- C. the annual investment management fees will be higher.
- D. investors cannot draw money out of the fund if they wish to sell their shares.



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21. Which of the following factors is the least likely to affect net operating income for a property?

- A. Rental income.
- B. Mortgage interest costs.
- C. Property management costs.
- D. Repair and maintenance costs.

Correct Answer: B..... LOS: Reading 76-f

Net operating income is before tax and interest costs.

Reference: CFA® Program Curriculum, Volume 6, pp. 193-194.

22. If a fund is to invest in illiquid assets there will be advantages in establishing it as a closed-end fund since:

- A. the fund itself will be more liquid.
- B. the managers can charge a higher front-end load.
- C. the annual investment management fees will be higher.
- D. investors cannot draw money out of the fund if they wish to sell their shares.

Correct Answer: D..... LOS: Reading 76-a

If the fund is structured as an open-end fund and at some point is faced with heavy redemptions the managers could have difficulty selling the assets to pay for the redemptions so a closed-end structure is often preferred.

Reference: CFA® Program Curriculum, Volume 6, pp. 177-179.



23. Market capitalization rates used to calculate the value of real estate:

- A. reflect recent selling prices.
- B. are low for high-risk properties.
- C. are the same for all types of property.
- D. are usually the same as the Treasury bill rate.

24. An investor invests in an open-end mutual fund. The investment return of the fund is 10% each year (gross of any expenses) and the fund expenses are shown in the table below. If the investor decided to sell the fund after two years, the investor's net return is closest to:

Sales charge	2%
Redemption fee	3% for the first three years
Annual expense	1.25%

- A. 3.3%.
- B. 12.2%.
- C. 13.8%.
- D. 19.1%.



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23. Market capitalization rates used to calculate the value of real estate:

- A. reflect recent selling prices.
- B. are low for high-risk properties.
- C. are the same for all types of property.
- D. are usually the same as the Treasury bill rate.

Correct Answer: A **LOS: Reading 76-f**

Capitalization rates reflect the investors' required rate of return and are equal to net operating income/market value.

Reference: CFA® Program Curriculum, Volume 6, pp. 193-194.

24. An investor invests in an open-end mutual fund. The investment return of the fund is 10% each year (gross of any expenses) and the fund expenses are shown in the table below. If the investor decided to sell the fund after two years, the investor's net return is closest to:

Sales charge	2%
Redemption fee	3% for the first three years
Annual expense	1.25%

- A. 3.3%.
- B. 12.2%.
- C. 13.8%.
- D. 19.1%.

Correct Answer: B **LOS: Reading 76-a**

For each \$1 invested only \$0.98 is invested in the fund due to the 2% sales charge. After adjusting for the annual expenses and redemption fee, \$1 will be worth $\$0.98(1.10)^2(0.9875)^{20.97} = \1.1216 or 12.16%

Reference: CFA® Program Curriculum, Volume 6, pp. 178-179.



25. The target beta of a market-neutral hedge fund is:

- A. -1.
- B. 0.
- C. 1.
- D. more than 1.

26. The market value of the assets held in an open-end no-load fund is \$12,000,000 and the liabilities are £500,000. There are one million shares outstanding. The price an investor would pay for shares is:

- A. \$11.50.
- B. \$12.00.
- C. likely to be at a discount to the net asset value of \$12.00.
- D. likely to be at a premium to the net asset value of \$11.50.



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25. The target beta of a market-neutral hedge fund is:

- A. -1.
- B. 0.
- C. 1.
- D. more than 1.

Correct Answer: B..... LOS: Reading 76-i

The objective of a market-neutral fund is to have no net market exposure, so the beta would be zero.

Reference: CFA® Program Curriculum, Volume 6, pp. 211-213.

26. The market value of the assets held in an open-end no-load fund is \$12,000,000 and the liabilities are £500,000. There are one million shares outstanding. The price an investor would pay for shares is:

- A. \$11.50.
- B. \$12.00.
- C. likely to be at a discount to the net asset value of \$12.00.
- D. likely to be at a premium to the net asset value of \$11.50.

Correct Answer: A..... LOS: Reading 76-a

The net asset value is $(\$12,000,000 - \$500,000) / 1,000,000 = \$11.50$. An open-end fund trades at the net asset value per share, plus or minus front-end load or redemption fees.

Reference: CFA® Program Curriculum, Volume 6, pp. 177-179.



27. Investment companies can invest:

- A. only in liquid assets.
- B. only in money market instruments.
- C. only in listed common stocks and bonds.
- D. in a wide variety of listed and unlisted securities.

28. A venture capital project has four years to run when it is estimated to make a payout of \$5 million. The probability of failure in the next four years is given below. Each probability is conditional on the project surviving the previous year.

Year	1	2	3	4
Probability of	30%	20%	20%	20%

If an investor's required return is 15% the maximum she would be willing to pay for the project is closest to:

- A. \$1.02 million.
- B. \$1.56 million.
- C. \$2.11 million.
- D. \$3.29 million.



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27. Investment companies can invest:

- A. only in liquid assets.
- B. only in money market instruments.
- C. only in listed common stocks and bonds.
- D. in a wide variety of listed and unlisted securities.

Correct Answer: D..... LOS: Reading 76-b

Investment companies invest in anything from liquid U.S. stocks and bonds to illiquid emerging market securities.

Reference: CFA® Program Curriculum, Volume 6, p. 177.



28. A venture capital project has four years to run when it is estimated to make a payout of \$5 million. The probability of failure in the next four years is given below. Each probability is conditional on the project surviving the previous year.

Year	1	2	3	4
Probability of	30%	20%	20%	20%

If an investor's required return is 15% the maximum she would be willing to pay for the project is closest to:

- A. \$1.02 million.
- B. \$1.56 million.
- C. \$2.11 million.
- D. \$3.29 million.

Correct Answer: A.....LOS: Reading 76-h

The probability that the project survives is $(1 - 0.30)(1 - 0.20)^3 = 35.8\%$

If C is the cost, the NPV if it survives is $\$5 \text{ million} / (1.15)^4 - C = \$2.86 \text{ million} - C$

The NPV if it fails is $-C$

$\text{NPV} = 0 = 0.358(\$2.86 \text{ million} - C) + 0.642(-C)$

$C = \$1.02 \text{ million}$

Reference: CFA® Program Curriculum, Volume 6, pp. 205-207.



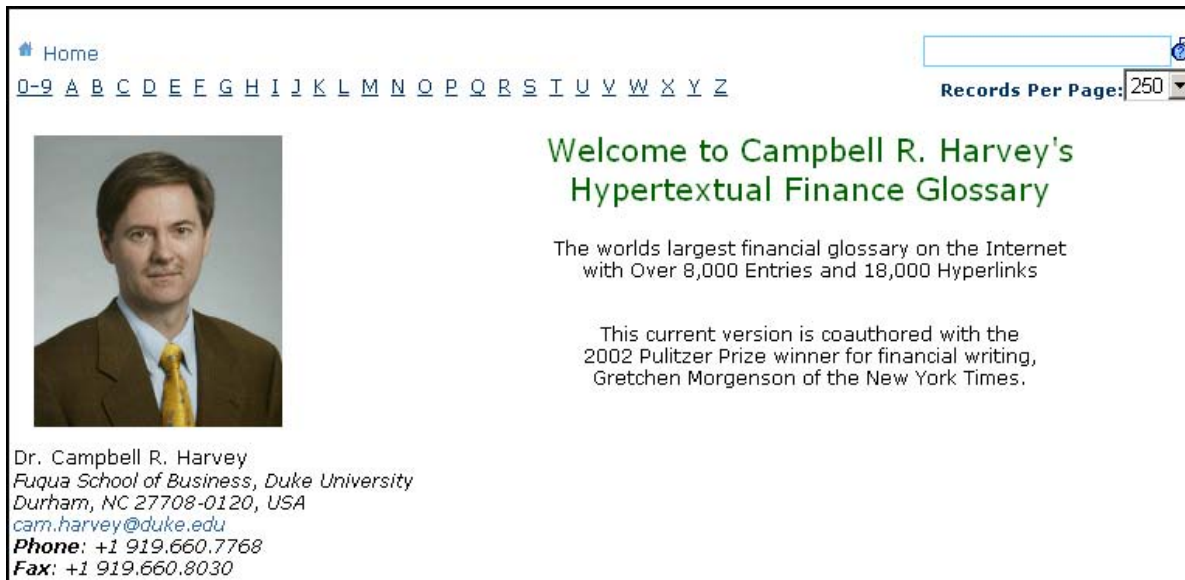
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Thank you for reading our book



Terminology:

Appraisal – for real estate, the process of estimating the current market value of a property.

Comparative sales approach – the value of a real estate is, at the most, the cost of the land and constructing the building at current prices.

Income approach – the value of real estate is the present value of its future income.

Market capitalization rate – divide a property's net operating income by the appropriate market capitalization rate to arrive at an estimate for its current market value. It reflects the rate of return required by investors in such a property.

Positive leverage – the return from a real estate investment is higher than the cost of debt, an investor will achieve a higher rate of return if he/she uses leverage to purchase the property.

Real Estate Investment Trust (REIT) – a closed-end investment company that invests in real estate and mortgages on real estate.

Real Estate Limited Partnership (RELP) – a real estate syndicate that invests in different types of real estate.

Seed financing – venture capital provided for product development and market research, the product is still at the 'idea' stage.

Start-up financing – venture capital provided for early stage product development and initial marketing.

First-stage financing – venture capital provided for initial commercial manufacture and sales.

Mezzanine (or bridge) financing – venture capital provided for a company that expects to go public in the near future.

Turnarounds – capital provided to restructure a company that has problems.

Leveraged buyouts (LBOs) – capital to fund a management group (a management buyout) or other investors who wish to purchase a business or company.

Investment company – a company that sells its own shares and uses the proceeds to buy stocks, bonds or other financial instruments.

Closed-end investment company – an investment company that issues a fixed number of shares, the shares are then traded in the secondary market.

Open-end investment company – a company that offers new shares to investors and redeems shares continuously.

Mutual fund – an open-end investment company.

No-load fund – shares are sold at net asset value, with no sales charge added.

Load fund – a fund that makes an initial sales charge, so the offering price is the net asset value plus a load.



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