2011 Level I Mock Exam: Afternoon Session

The afternoon session of the 2011 Level I Chartered Financial Analyst (CFA®) Mock Examination has 120 questions. To best simulate the exam day experience, candidates are advised to allocate an average of 1.5 minutes per question for a total of 180 minutes (3 hours) for this session of the exam.

Questions	Topic	Minutes
1-18	Ethical and Professional Standards	27
19-32	Quantitative Methods	21
33-44	Economics	18
45-68	Financial Statement Analysis	36
69-78	Corporate Finance	15
79-90	Equity Investments	18
91-96	Derivative Investments	9
97-108	Fixed Income Investments	18
109-114	Alternative Investments	9
115-120	Portfolio Management	9
	Total:	**180**

Questions 1 through 18 relate to Ethical and Professional Standards.

1. Tibor Figeczky, CFA, is an equity trader at Global Investment Bank (GB). Figeczky traded the bank's investment portfolio profitably for the past three years and earned significant bonuses for his efforts. Subsequently, internal auditors of GB formally accused Figeczky of exceeding his trading authority and engaging in unauthorized trades. According to the CFA Institute Code of Ethics and Standards of Professional Conduct, Figeczky should *most likely*:

   A. disclose the complaint to the CFA Institute.
   B. refuse further bonuses until the issue is resolved.
   C. request a temporary suspension of his CFA Institute membership.

   Answer = A

   "Code of Ethics and Standards of Professional Conduct," CFA Institute
   2011 Modular Level I, Vol. 1, p. 8
   Study Session 1-1-c
   Explain the ethical responsibilities required by the Code and Standards, including the multiple sub-sections of each Standard.

   A is correct, as members and candidates must self-disclose on the annual Professional Conduct Statement all matters that question their professional conduct, such as involvement in civil litigation or a criminal investigation or being the subject of a written complaint.

2. Alexandra Zagoreos, CFA, is the head of a government pension plan. Whenever Zagoreos hires a money management firm to work with the pension plan, she finalizes the deal over dinner at a nice restaurant. At these meals, Zagoreos also arranges for the money manager to provide her payments equal to 10% of the management fee the manager receives from the pension plan. Zagoreos keeps half of the payments for her own use and distributes the remainder as cash incentives to a handful of her most trusted staff. Zagoreos *least likely* violated which of the following CFA Institute Code of Ethics and Standards of Professional Conduct?

   A. Referral fees.
   B. Loyalty, Prudence and Care.
   C. Additional Compensation Arrangements.

   Answer = A

   "Guidance for Standards I-VII," CFA Institute
   2011 Modular Level I, Vol. 1, pp. 63, 99, 136
   Study Session 1-2-b
   Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

   A is correct as the money should not be accepted without receiving written consent from all parties involved, therefore Zagoreos is in violation of Standard IV (B) Additional Compensation Arrangements. However, there is no indication that the member has received compensation, consideration, or benefit received from, or paid to, others for the recommendation of products or services and therefore has not violated Standard VI (6) related to referral fees.

3. Christy Pasley, CFA, is the Chief Investment Officer for Risen Investment Funds (RIF) a mutual fund organization. At a meeting between Homeland Builders (HB), a publicly traded company, Pasley learns HB sales are much slower than expected. In fact, HB sales declined more than 20% in the last quarter, but this information has not yet been widely disseminated. Immediately after meeting with HB, Pasley purchases put options on HB stock. Subsequently, HB issues a press release with their most recent sales figures. Has Pasley *most likely* violated the CFA Institute Standards of Professional Conduct?

   A. Yes.
   B. No, because the securities purchased were options.
   C. No, because the information was obtained directly from the company.

   Answer = A

   "Guidance for Standards I-VII," CFA Institute
   2011 Modular Level I, Vol. 1, pp. 49-55
   Study Session 1-2-b
   Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

   A is correct, as members and candidates who possess material nonpublic information that could affect the value of an investment must not act or cause others to act on the information. Even though the information is disclosed in a meeting with the mutual fund, this has not made the information public and it should not be used until it is more widely disseminated. It does not matter that the securities purchased are options rather than stocks.

4. Florence Zuelekha, CFA, is an equity portfolio manager at Grid Equity Management (GEM), a firm specializing in commodities. Zuelekha, who previously focused on alternative energy, recently attends her first commodity conference, sponsored in large part by GEM. Independent industry experts, argued commodities would increase in value and recommended investors hold at least 10% of their portfolio assets in commodities based on consistent increases in their values over the previous two years. Without doing any additional research, Zuelekha recommends to all her clients an immediate allocation of 5% of their portfolio into commodities. Over the next few weeks, Zuelekha moves her own portfolio to a 10% commodity allocation. Which of the CFA Standards did Zuelekha *most likely* violate?

   A. Priority of Transactions.
   B. Independence and Objectivity.
   C. Diligence and a Reasonable Basis.

Answer = C

"Guidance for Standards I-VII," CFA Institute
2011 Modular Level I, Vol. 1, pp. 107-110
Study Session 1-2-b
Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

C is correct, as Standard (V) requires members and candidates to have a reasonable and adequate basis, supported by appropriate research and investigation, for any investment analysis, recommendation, or action. Relying solely upon attendance at a one-day conference listening to industry experts to make an investment recommendation, especially when the industry experts have based their recommendations upon price data only, would not meet the requirements of the Code and Standard with regard to Diligence and a Reasonable Basis.

5. Joan Tasha, CFA, a supervisor at Olympia Advisors (OA), wrote and implemented compliance policies at her firm. A long time OA employee, Derek Longtree, recently changed the asset allocation of a client, which is inconsistent with her financial needs and objectives and with OA's policies. Until now Longtree has never violated OA's policies. Tasha discusses the issue with Longtree but takes no further action. Do Tasha's actions concerning Longtree most likely violate any CFA Institute Standards of Professional Conduct?

A. No.
B. Yes, because she failed to detect Longtree's actions.
C. Yes, because she did not take steps to ensure that the violation will not be repeated.

Answer = C

"Guidance for Standards I-VII," CFA Institute
2011 Modular Level I, Vol. 1, pp. 101-102
Study Session 1-2-c
Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

C is correct.. Once a supervisor learns that an employee has violated or may have violated the law or the Code and Standards, the supervisor must promptly initiate an investigation to ascertain the extent of the wrongdoing. Relying on an employee's statements about the extent of the violation or assurances that the wrongdoing will not recur is not enough. Reporting the misconduct up the chain of command and warning the employee to cease the activity are also not enough. Pending the outcome of the investigation, a supervisor should take steps to ensure that the violation will not be repeated, such as placing limits on the employee's activities or increasing the monitoring of the employee's activities.

6. Wang Dazong, CFA, is a sole proprietor investment advisor. Dazong believes in putting his money at risk along with his clients and trades the same securities as his clients. In order to ensure fair treatment of all accounts, he rotates trade allocations so that each account has an equal likelihood of receiving a fill on their orders. This allocation procedure also applies to Dazong's own account. According to the CFA Institute Code of Ethics and Standards of Professional Conduct, the allocation procedure used by Dazong:

A. complies with the Standards.
B. requires revision to ensure client trades take precedence.
C. should be disclosed and written approval received from clients.

Answer = B

"Guidance for Standards I-VII," CFA Institute
2011 Modular Level I, Vol. 1, pp. 131-134
Study Session 1-2-c
Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

B is correct because Standard VI (B) requires client transactions to be given precedence over transactions made on behalf of the members or candidate's firm or personal transactions. Because the advisor trades alongside his clients and allocates trades on a rotating basis, there are times when the advisor's trades will receive priority over his clients in violation of the Code and Standards. A member or candidate having the same investment positions or being co-invested with clients does not always create a conflict. Some clients in certain investment situations require members or candidates to have aligned interests. Personal investment positions or transactions of members or candidates or their firms should never, however, adversely affect client investments.

7. Tammi Holmberg is enrolled to take the Level I CFA examination. While taking the CFA examination, the candidate on Holmberg's immediate right takes a stretch break and a piece of paper from his pocket falls onto Holmberg's desk. Holmberg glances at the paper and realizes there is information written on the paper, which includes a formula Holmberg needs for the question she is working on. Holmberg had not memorized this formula and could not complete the question without this information. Holmberg pushes the paper off her desk and uses the formula to complete the question. According to the CFA Institute Code of Ethics and Standards of Professional Conduct, Holmberg *most likely*:

A. compromised her exam.
B. was free to act on the information that fell on her desk.
C. is responsible for notifying exam proctors of her neighbor's violation.

Answer = A

"Guidance for Standards I-VII," CFA Institute

2011 Modular Level I, Vol. 1, pp. 139-140
Study Session 1-2-b
Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

A is correct because Holmberg's conduct compromised the validity of her exam and violated Standard VII (A). Her conduct was also a violation of the rules and regulations of the CFA Program, the Candidate pledge, and the CFA Institute Code and Standards.

8. Kazuya Kato, CFA, is a widely followed economist at a global investment bank. When Kato opines on economic trends, markets react by moving stock valuations considerably. When Kato receives information of a temporary oversupply of rare earth metals, he issues a forecast that price trends for rare earth metals will be down significantly on a long-term basis. Kato also secretly sells his report to a widely followed Internet site. Prior to issuing this forecast, Kato emailed all portfolio managers at his bank with a copy of his report indicating that his opinion would be reversed shortly so there will be trading opportunities. Kato *least likely* violated which of the following CFA Institute Code of Ethics and Standards of Professional Conduct?

A. Market Manipulation.
B. Priority of Transactions.
C. Additional Compensation Arrangements.

Answer = B

"Guidance for Standards I-VII," CFA Institute
2011 Modular Level I, Vol. 1, pp. 59-60, 99-100, 131
Study Session 1-2-a
Demonstrate a thorough knowledge of the Code and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

B is correct because the Priority of Transactions standard has not been violated as it relates to investment transactions for clients and employers having priority over Member or Candidate transactions. There is no indication in this case that transactions have occurred as a result of the report being issued by the economist. Although it is reasonable to expect there will be transactions, it is only when these happen that a violation will have occurred.

9. Oliver Rae, CFA, is an individual investment adviser specializing in commercial real estate. Rae recently packaged a real estate limited partnership (RELP), which he sold in a private placement to his existing advisory clients. The partnership has purchased four properties in which Rae held a 5% minority interest. According to the CFA Institute Code of Ethics and Standards of Professional Conduct, Rae should:

A. manage the partnership separately from his advisory business.
B. disclose conflicts related to the real estate he sold to the partnership.
C. return all profits earned from his minority interest to the limited partners.

Answer = B

"Guidance for Standards I-VII," CFA Institute
2011 Modular Level I, Vol. 1, pp.123-126
Study Session 1-2-c
Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

B is correct because according to Standard VI Members and Candidates must make full and fair disclosure of all matters that could reasonably be expected to impair their independence and objectivity or interfere with respective duties to clients.

10. Noor Hussein, CFA, runs a financial advisory business, specializing in retirement planning and investments. One of her clients asks her to advise the firm's pension fund trustees on available investments in the market including Islamic products. On the day prior to the meeting, Hussein spends an hour familiarizing herself with Islamic investment products and getting updates on local market conditions. The next day she recommends Islamic investment products to the trustees based on her research and her expertise in retirement planning and investments. The trustees subsequently incorporate Islamic products into their investment allocation. Did Hussein's basis for the recommendation *most likely* comply with the CFA Code of Ethics?

A. Yes.
B. No, with regard to Misconduct.
C. No, with regard to Diligence and Reasonable Basis.

Answer = C

"Code of Ethics and Standards of Professional Conduct," CFA Institute
2011 Modular Level I, Vol. 1, pp. 107-111
Study Session 1-2-b
Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

C is correct because Hussein did not likely act with competence and diligence as required by the CFA Institute Code of Ethics [Standard V(A)]. An hour of preparation with regard to Islamic investment products would not likely be considered sufficient to give investment advice to pension plan trustees.

11. Praful Chandarana, CFA, is starting a new business to offer investment-consulting services to pension fund trustees in response to a new regulation that requires all pension fund Investment Policy Statements (IPS) to be reviewed and approved by an independent CFA Charterholder. Prior to starting the new business, he meets with the pension fund regulator to clarify if the CFA Charterholder undertaking the IPS review should be a licensed financial advisor. A separate regulatory body grants the license to those giving investment advice to clients. The regulator states they do not require the CFA Charterholder to hold a financial advisor's license, despite financial-related advice being given to the pension funds during any IPS review. Chandarana therefore, starts his new business to undertake IPS reviews without obtaining a financial advisors license. Subsequently when clients of his former employer contact him he informs them of his new company and the services he offers. Does Chandarana *most likely* violate the CFA Code and Standards?

A. No.
B. Yes, with regard to Professionalism.
C. Yes, with regard to Duties to Employer.

Answer = B

"Code of Ethics and Standards of Professional Conduct," CFA Institute
2011 Modular Level I, Vol. 1, pp. 19-25
Study Session 1–2-b
Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

B is correct because the CFA Code of Ethics requires Chandarana to uphold the rules governing financial advisors. However, he failed to do so because he did not obtain a financial advisors license. The CFA Standards of Professional Conduct (I(A) – Professionalism – Knowledge of the Law) states that when rules or regulations are in conflict, Members must comply with the more strict law, in this case the requirement for financial advisors to be licensed.

12. Mailaka Securities (MS) advertises the use of a "bottom up" investment style in its marketing material. Recently, MS senior management decided to switch to a "top down" approach, citing the fact that it is less labor intensive. All other aspects of the research process are to remain the same. The head of research at MS, Mara Cherogony, CFA, is instructed to supervise the implementation of the new procedures, notify clients of the changes, and revise the text of marketing materials when new material is produced. Which of the following CFA Standards pertaining to Investment Analysis, Recommendations and Actions is Cherogony *least likely* in danger of violating?

A. Supervisory Responsibility.
B. Communication with Clients.
C. Diligence and Reasonable Basis.

Answer = C

"Guidance for Standards I-VII," CFA Institute
2011 Modular Level I, Vol. 1, pp. 116-117
Study Session 1–2–a
Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

C is correct because research can still be considered diligent and having a reasonable basis if done using a "top down" research methodology as opposed to a "bottom up" methodology. By not communicating to prospective clients the change in the investment process through the delay in the creation of new marketing material however Cherogony violates Standard V (B) – Communication with Clients which requires Members and Candidates to disclose to clients and prospective clients the basic format and general principles of the investment processes they use to analyze investments, select securities and construct portfolios and must promptly disclose any changes that might materially affect those processes. As a supervisor, Cherogony is responsible for ensuring compliance with the Code and Standards.

13. Preeta Singh, a CFA Candidate, is an asset manager employed by a fund management company managing very large segregated pension funds. In her spare time outside of working hours, Singh likes to provide management-consulting services to small companies to help grow their businesses, focusing on strategic planning. Singh is paid for the consulting services and has also provided her employer information about these outside activities. Does Singh *most likely* violate the CFA Code of Ethics with regard to Duties to Employers?

A. No.
B. Yes, with regard to loyalty.
C. Yes, with regard to additional compensation arrangements.

Answer = A

"Guidance for Standards I-VII," CFA Institute
2011 Modular Level I, Vol. 1, pp. 90-91, 99
Study Session 1–2–b
Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

A is correct because Singh does not violate any Standard relating to Duties to Employers. She conducts unrelated non-competitive services to clients outside of business hours and thus does not deprive her employer of the advantage of her skills and abilities, nor is there any indication she divulges confidential information or otherwise causes harm to her employer. She has informed her employers about her outside activities.

14. Yip Wai Yin, a CFA Candidate, is an independent mutual fund sales agent. For every front-end load product she promotes, Yip receives a portion of the front-end fee as commission, at the time of sale. For every back-end load fund she sells, Yip receives a smaller commission paid at the end of the year. Yip always informs her clients she is paid a commission as an agent, but does not provide details of the compensation structure. When pitching her favored front-end load product line she tells clients 20% of her commission is always invested in the same fund as proof of her confidence in the fund she recommends. Which CFA Code of Standards with regard to Conflicts of Interest does Yip *least likely* violate?

A. Referral Fees.
B. Disclosure of Conflicts.
C. Priority of Transactions.

Answer = C

"Guidance for Standards I-VII," CFA Institute
2011 Modular Level I, Vol. 1, pp. 123-125, 131, 136
Study Session 1–2–a
Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

C is correct because Yip's investments do not adversely affect the interest of the clients and therefore do not violate the Priority of Transactions requirement. A Candidate having the same investment positions does not always create a conflict of interest and in some instances, having an aligned investment portfolio can be beneficial to the client.

15. David Bravoria, CFA, is an independent financial advisor for a high net worth client with whom he had not had contact in over two years. During a recent brief telephone conversation, the client states he wants to increase his risk exposure. Bravoria subsequently recommends and invests in several high-risk funds on behalf of the client. Bravoria continues, as he has done in the past, to send to his client monthly, detailed itemized investment statements. Did Bravoria *most likely* violate any CFA Standards?

A. No.
B. Yes, with regard to investment statements.
C. Yes, with regard to purchasing venture capital funds.

Answer = C

"Guidance for Standards I-VII," CFA Institute
2011 Modular Level I, Vol. 1, pp. 65-67
Study Session 1–2–b
Distinguish between conduct that conforms to the Code and Standards and conduct that violates the Code and Standards.

C is correct because Bravoria violated Standard III – Duties to Clients in not exercising Loyalty, Prudence and Care. Bravoria had not updated his client's profile in over two years thus should not have made further investments, particularly in high risk investments until such time as he updated the client's risk and return objectives, financial constraints and financial position. Bravoria provided his client with investment statements more frequently than that which is required; i.e. quarterly so was not in violation of regular account information.

16. Sato Kashingaki, CFA, is a financial advisor who practices in multiple jurisdictions. In his resident country, Country A, he is not required by law to hold a financial advisors license but he is required to uphold a fiduciary duty to his clients. In Country B, authorities require him to hold a financial advisors license but he is not expected to uphold a fiduciary duty to his clients. In Country C, authorities require both a financial advisors license and an asset management license in addition to upholding a fiduciary responsibility towards clients. In which of the three countries does Kashangaki have the duty to adhere to the CFA Code and Standards over local laws?

A. Country A.
B. Country B.
C. Country C.

Answer = B

"Code of Ethics and Standards of Professional Conduct," CFA Institute
2011 Modular Level I, Vol. 1, pp. 22-23
Study Session 1–2–a
Demonstrate a thorough knowledge of the Code of Ethics and Standards of Professional Conduct by applying the Code and Standards to situations involving issues of professional integrity.

B is correct because Standard I – Professionalism requires CFA Members and Candidates to comply with the more strict law, rule or regulation in the event of conflicts of any applicable laws, rules and regulations (including the CFA Institute Code of Ethics and Standards of Professional Conduct). Country B does not require a financial advisor to uphold a fiduciary duty (as is required by Country A and C); i.e. put the client's interest before their own, therefore the CFA Code of Ethics and Standards of Professional Conduct (Duty to Clients) would be applicable as it is the stricter of the two.

17. Hezi Cohen, a CFA candidate, is a heavy user of social networking sites on the Internet. His favorite site only allows a limited number of characters for each entry so he has learned to abbreviate everything, including CFA trademarks. Cohen also enjoys professional networking sites and contributes regularly to blogs that discuss the broad topical areas covered within the CFA Exam Program. In addition, he posts to these blogs pieces he has written in his area of expertise: retirement planning. By claiming to be an expert on retirement planning, he believes his stature within the investment community increases and he can gain more clients. Which Internet activity can Cohen *most likely* continue to be in compliance with the CFA Standards of Professional Conduct?

A. Use of abbreviations.
B. Claiming retirement planning expertise.
C. Blogging about broad topical areas within the CFA Exam Program.

Answer = B

"Guidance for Standards I-VII," CFA Institute
2011 Modular Level I, Vol. 1, pp. 139-148
Study Session 1–2–c
Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

B is correct because the CFA Standards do not prevent a person from claiming to be an expert in their area of specialty as long it is not a misrepresentation and/or an exaggeration of their skill and expertise.

18. Meshack Bradovic, CFA, was recently hired as a credit analyst at a credit rating agency whose major clients include publicly listed companies on the local stock exchange. One of the clients is currently preparing to issue a new bond to finance a major factory project. Analysts are speculating that without the new factory the company will not survive the onslaught of competition from increasing imports; therefore, the company is counting on an upgraded credit rating to enhance the subscription level of the issue. Bradovic's research suggests the creditworthiness of the company has severely deteriorated over the last year due to negative operating cash flows. Without conducting extensive research, Bradovic's boss puts pressure on him to upgrade the credit rating to an investment grade rating. What course of action is *most* appropriate for Bradovic to prevent any violation of the CFA Code or Standards?

A. Quit his position with the firm.
B. Upgrade the rating but note his objections in writing.
C. Disassociate with the credit rating report, the bond issue and the client.

Answer = A

"Guidance for Standards I-VII," CFA Institute
2011 Modular Level I, Vol. 1, pp. 108,110

Study Session 1–2–c
Recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct.

A is correct as the boss' insistence that all credit ratings be given an investment grade rating irrespective of the analysis undertaken indicates a systemic disregard for due diligence, reasonable basis and true representation. This shows a total disregard for the CFA Standards. Bradovic's best course of action consequently is to resign, as the company's current practice of giving false credit ratings is likely to continue.

Questions 19 through 32 relate to Quantitative Methods

19. Using the sample results given below, drawn as 25 paired observations from their underlying distributions, test if the mean returns of the two portfolios differ from each other at the 1% level of statistical significance. Assume the underlying distributions of returns for each portfolio are normal and that their population variances are not known.

	Portfolio 1	Portfolio 2	Difference
Mean Return	17.00	21.25	4.25
Standard Deviation	15.50	15.75	6.25
t-statistic for 24 df and at the 1% level of statistical significance = 2.807			

Based on the paired comparisons test of the two portfolios, the *most* appropriate conclusion is:

A. reject the hypothesis that the mean difference equals zero as the computed test statistic exceeds 2.807.
B. accept the hypothesis that the mean difference equals zero as the computed test statistic exceeds 2.807.
C. accept the hypothesis that the mean difference equals zero as the computed test statistic is less than 2.807.

Answer = A

"Hypothesis Testing," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2011 Modular Level I, Vol. 1, pp. 612-616
Study Session 3-11-h
Identify the appropriate test statistic and interpret the results for a hypothesis test concerning the mean difference of two normally distributed populations (paired comparisons test).

The test statistic is:
$(\bar{d} - \mu_{d0})$ / $(s_d$ / $\sqrt{n})$, where $\bar{d}$ is the mean difference, μ_{d0} is the hypothesized difference in the means, s_d is the sample standard deviation of differences, and n is the sample size. In this case, the test statistic equals: $(4.25 - 0)$ / $(6.25$ / $\sqrt{25})$ = 3.40. As 3.40 > 2.807, we reject the null hypothesis that the mean difference is zero.

20. The following ten observations are a sample drawn from a normal population: 25, 20, 18, -5, 35, 21, -11, 8, 20, and 9. The fourth quintile (80^{th} percentile) of the sample is *closest* to:

A. 8.0.
B. 21.0.
C. 24.2.

Answer = B

"Statistical Concepts and Market Returns," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2011 Modular Level I, Vol. 1, pp. 375-378
Study Session 2-7-f
Describe, calculate and interpret quartiles, quintiles, deciles, and percentiles.

Ranking the sample from smallest to largest, we have -11, -5, 8, 9, 18, 20, 20, 21, 25, and 35. The fourth quintile (80^{th} percentile) is the eighth largest of these ordered numbers. The eighth largest number is 21.

21. When calculated for the same data and provided there is variability in the observations, the geometric mean will *most likely* be:

A. equal to the arithmetic mean.
B. less than the arithmetic mean.
C. greater than the arithmetic mean.

Answer = B

"Statistical Concepts and Market Returns," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2011 Modular Level I, Vol. 1, p. 374
Study Session 2-7-e
Define, calculate and interpret measures of central tendency, including the population mean, sample mean, arithmetic mean, weighted average or mean (including a portfolio return viewed as a weighted mean), geometric mean, harmonic mean, median, and mode.

As stated in the reading, "In fact, the geometric mean is always less than or equal to the arithmetic mean. The only time the two means will be equal is when there no variability in the observations."

22. The Central Limit Theorem is *best* described as stating that the sampling distribution of the sample mean will be approximately normal for large-size samples:

A. if the population distribution is normal.
B. if the population distribution is symmetric.
C. for populations described by any probability distribution.

Answer = C

"Sampling and Estimation," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2011 Modular Level I, Vol. 1, pp. 556-557
Study Session 3-10-d
Interpret the central limit theorem and describe its importance.

Page 556 of the reading. The Central Limit Theorem. Given a population described by any probability distribution having a mean μ and finite variance σ^2, the sampling distribution of the sample mean $\bar{X}$ computed from samples of size *n* from this population will be approximately normal with mean μ (the population mean) and variance σ^2 / n (the population variance divided by *n*) when the sample size *n* is large.

23. If the stated annual interest rate is 9% and the frequency of compounding is daily, the effective annual rate is *closest* to:

A. 9.00%.
B. 9.42%
C. 9.88%.

Answer = B

"Time Value of Money," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2011 Modular Level I, Vol. 1, pp. 266-267
Study Session 2-5-c
Calculate and interpret the effective annual rate, given the stated annual interest rate and the frequency of compounding.

Solve for effective annual rate using:

EAR = $(1 + \text{periodic interest rate})^m - 1 = (1 + (.09 / 365))^{365} - 1 = 0.094162 \sim 9.42\%$

24. All else held constant, the width of a confidence interval is *most likely* to be smaller if the sample size is:

A. larger and the degree of confidence is lower.
B. larger and the degree of confidence is higher.
C. smaller and the degree of confidence is lower.

Answer = A

"Sampling and Estimation," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2011 Modular Level I, Vol. 1, pp. 561-567
Study Session 3-10-h
Explain the construction of confidence intervals.

As we increase the degree of confidence, the confidence interval becomes wider. A larger sample size decreases the width of a confidence interval.

25. The belief that trends and patterns tend to repeat themselves and are, therefore, somewhat predictable *best* describes:

A. technical analysis.
B. weak-form efficiency.
C. arbitrage pricing theory.

Answer = A

"Technical Analysis," Barry M. Sine, CFA, and Robert A. Strong, CFA
2011 Modular Level I, Vol. 1, p. 647
Study Session 3-12-a
Explain the principles of technical analysis, its applications, and its underlying assumptions.

Technical analysts believe that trends and patterns tend to repeat themselves and are, therefore, somewhat predictable

26. An investor purchases 100 shares of stock at a price of $40 per share. The investor holds the stock for exactly one year and then sells the 100 shares at a price of $41.50 per share. On the date of sale, the investor receives dividends totaling $200. The holding period return on the investment is *closest* to:

A. 3.75%.
B. 8.43%.
C. 8.75%.

Answer = C

"Discounted Cash Flow Applications," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2011 Modular Level I, Vol. 1, p. 319
Study Session 2-6-c
Define, calculate, and interpret a holding period return (total return).

HPR = $(P_1 – P_0 + D_1) / P_0$. In this problem: (41.50 – 40 + 2) / 40 = .0875 = 8.75%

27. The number of ways we can choose *r* objects from a total of *n* objects, when the order in which the *r* objects are listed does matter is given by the permutation formula:

$$_nP_r = \frac{n!}{(n-r)!}$$

How many permutations are possible when choosing 4 objects from a total of 10 objects?

A. 30.
B. 210.
C. 5,040.

Answer = C

"Probability Concepts," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2011 Modular Level I, Vol. 1, p. 474
Study Session 2-8-o
Identify the most appropriate method to solve a particular counting problem and solve counting problems using the factorial, combination, and permutation notations.

$_nP_r = \frac{n!}{(n-r)!}$ In this problem, 10! / (10 – 4)! = 10! / 6! = 5,040.

28. A discrete uniform distribution consists of the following twelve values:

-2.5	5.3	6.7	8.8	-4.6	9.2
3.3	8.2	1.4	0.8	-5.3	6.9

On a single draw from the distribution, the probability of drawing a value between -2.0 and 2.0 from the distribution is *closest* to:

A. 16.67%.
B. 18.04%.
C. 27.59%.

Answer = A

"Common Probability Distributions," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2011 Modular Level I, Vol. 1, pp. 497-498
Study Session 3-9-f
Calculate and interpret probabilities given the discrete uniform and the binomial distribution functions.

First order the values from smallest to largest.

-5.3	-4.6	-2.5	0.8	1.4	3.3
5.3	6.7	6.9	8.2	8.8	9.2

Then note that two of the twelve values are between -2.0 and 2.0. Thus, the probability of a draw from the distribution being between -2.0 and 2.0 is 2/12 = 0.16667.

29. A sample of 100 observations drawn from a normally distributed population has a sample mean of 12 and a sample standard deviation of 4. Using the extract from the *z*-distribution given below, find the 95% confidence interval for the population mean.

Cumulative Probabilities for a Standard Normal Distribution $P(Z \le x) = N(x)$ for $x \ge 0$ or $P(Z \le z) = N(z)$ for $z \ge 0$										
x or z	0	0.01	0.02	0.03	0.04	.05	.06	.07	.08	.09
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817

The 95% confidence interval is *closest* to:

A. 7.840 to 27.683
B. 11.216 to 12.784
C. 11.340 to 12.660

Answer = B

"Sampling and Estimation," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2011 Modular Level I, Vol. 1, pp. 563-564
Study Session 3-10-j
Calculate and interpret a confidence interval for a population mean, given a normal distribution with 1) a known population variance, 2) an unknown population variance, or 3) an unknown variance and a large sample size.

The 95% confidence interval uses $z_{0.025}$ as the reliability factor. The cumulative probability value closest to 0.975 provides the appropriate value of $z_{0.025}$ which is $z_{0.025}$ = 1.96. The confidence interval is formed as:

$$\bar{X} \pm z_{\frac{\alpha}{2}} \times \frac{s}{\sqrt{n}}$$

In this problem, 12 ± 1.96 × (4 / √100) = 12 ± 1.96 × 0.4. Thus the confidence interval spans 11.216 to 12.784.

30. A test statistic is *best* defined as the difference between the sample statistic and the value of the population parameter under H_0 divided by the:

A. sample standard deviation.
B. standard error of the sample statistic.
C. appropriate value from the *t*-distribution .

Answer = B

"Hypothesis Testing," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2011 Modular Level I, Vol. 1, p. 593
Study Session 3-11-b
Define and interpret a test statistic, a Type I and a Type II error, and a significance level, and explain how significance levels are used in hypothesis testing.

A test statistic is defined as the difference between the sample statistic and the value of the population parameter under H_0 divided by the standard error of the sample statistic.

31. In generating an estimate of a population parameter, a larger sample size is *most* likely to improve the estimator's:

A. efficiency.
B. consistency.
C. unbiasedness.

Answer = B

"Sampling and Estimation," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2011 Modular Level I, Vol. 1, pp. 560-561
Study Session 3-10-g
Identify and describe the desirable properties of an estimator (unbiased, efficient, consistent).

Unbiasedness and efficiency are properties of an estimator's sampling distribution that hold for any size sample. A consistent estimator is one for which the probability of estimates close to the value of the population parameter increases as sample size increases.

32. Using a discount rate of 5%, compounded monthly, the present value of $5,000 to be received three years from today is *closest* to:

A. $4,250.
B. $4,305.
C. $4,320.

Answer = B

"The Time Value of Money," Richard A. Defusco, CFA, Dennis W. McLeavey, CFA, Jerald E. Pinto, CFA, and David E. Runkle, CFA
2011 Modular Level I, Vol. 1, pp.272-273
Study Session 2-5-d
Solve time value of money problems when compounding periods are other than annual.

$PV = FV_N (1 + r_s / m)^{-mN}$ In this case, $PV = 5{,}000\ (1 + 0.05 / 12)^{(-12\times3)} = 4{,}304.88$.

Alternatively, enter into your financial calculator FV=5,000, N=36, I/Y =5/12, PMT=0, and solve for PV.

Questions 33 through 44 relate to Economics

33. If the quantity demanded of pears falls by 4% when the price of apples decreases by 3%, then apples and pears are *best* described as:

A. substitutes.
B. complements.
C. inferior goods.

Answer = A

"Elasticity," Michael Parkin
2011 Modular Level I, Vol. 2, pp. 19, 21
Study Session 4-13-a
Calculate and interpret the elasticities of demand (price elasticity, cross elasticity, and income elasticity) and the elasticity of supply and discuss the factors that influence each measure.

The cross elasticity of demand is defined as the percentage change in quantity demanded divided by the percentage change in the price of a substitute or complement. If the cross elasticity of demand is positive, the goods are substitutes. In this case, the 4 % decline in quantity of pears is divided by the 3 % decline in the price of apples, which is a positive number, -4 / -3 = +1.333333.

34. Assume that at current production and consumption levels, a product exhibits price elasticity of demand equal to 1.20 and elasticity of supply equal to 1.45. The true economic consequences of taxes imposed on the seller of such a product are *most likely* borne:

A. by the seller.
B. by the buyer.
C. partly by the buyer and partly by the seller.

Answer = C

"Elasticity," Michael Parkin
2011 Modular Level I, Vol. 2, pp. 27-28
"Markets in Action," Michael Parkin
2011 Modular Level I, Vol. 2, pp. 80-84
Study Session 4-13-a; 4-15-c
Calculate and interpret the elasticities of demand (price elasticity, cross elasticity, and income elasticity) and the elasticity of supply and discuss the factors that influence each measure.
Explain the impact of taxes on supply, demand, and market equilibrium, and describe tax incidence and its relation to demand and supply elasticity.

As the good exhibits neither perfectly elastic nor perfectly inelastic demand or supply (see pp. 27-28), the incidence of taxation will be shared by buyers and sellers regardless of whether the tax is placed on buyers or on sellers.

35. Assume that a monopoly is charging a price higher than the price that would exist in pure competition. If the monopoly decides to increase the price even more, the deadweight loss to society will *most likely*:

A. increase.
B. decrease.
C. remain the same.

Answer = A

"Monopoly," Michael Parkin
2011 Modular Level I, Vol. 2, pp. 199-201
Study Session 5-19-d
Explain how consumer and producer surpluses are redistributed in a monopoly, including the occurrence of deadweight loss and rent seeking.

As depicted in Figure 6 on page 200 of the readings, a higher monopoly price will increase the monopoly's profit and also increase the deadweight loss.

36. Assume the U.S. Federal Reserve system (the Fed) has decided to lower interest rates in the economy. To carry out this policy, the Fed will *most likely*:

A. sell securities.
B. buy securities.
C. increase required reserve ratios.

Answer = B

"Money, the Price Level, and Inflation," Michael Parkin
2011 Modular Level I, Vol. 2, p. 376
"Monetary Policy," Michael Parkin
2011 Modular Level I, Vol. 2, pp. 468, 475
Study Session 6-24-d, 6-27-a, b
Explain the goals of the U.S. Federal Reserve (Fed) in conducting monetary policy and how the Fed uses its policy tools to control the quantity of money, and describe the assets and liabilities on the Fed's balance sheet.
Discuss the goals of U.S. monetary policy and the Federal Reserve's (Fed's) means for achieving the goals, including how the Fed operationalizes those goals.
Describe how the Fed conducts monetary policy and explain the Fed's decision-making strategy, including an instrument rule, a targeting rule, open-market operations, and the market for reserves.

When the Fed purchases securities, the Fed increases the reserves held by the banking system. These increased reserves lead to a reduction in the federal funds rate and, ultimately, to a reduction in other interest rates in the economy.

37. Government policies to stimulate an economy suffering a recession and designed to reduce unemployment in the short run are *most likely* directed towards reducing which type of unemployment?

A. Cyclical
B. Frictional
C. Structural

Answer = A

"Monitoring Jobs and the Price Level," Michael Parkin
2011 Modular Level I, Vol. 2, pp. 312-313
Study Session 5-22-c
Explain the types of unemployment, full employment, the natural rate of unemployment, and the relation between unemployment and real GDP.

The fluctuating unemployment over the business cycle is called cyclical unemployment.

38. Which of the following statements concerning market structure and Herfindahl-Hirschman Index (HHI) is *most* accurate?

A. HHI is a useful measure of potential barriers to entry.
B. Low control over prices is characteristic of oligopolies.
C. An HHI value of 60 indicates that a market is highly competitive.

Answer = C

"Organizing Production," Michael Parkin
2011 Modular Level I, Vol. 2, pp. 114-117
"Monopolistic Competition and Oligopoly" Michael Parkin
2011 Modular Level I, Vol. 2, pp. 234-235, 243
Study Session 4-16-f, 5-20-a
Calculate and interpret the four-firm concentration ratio and the Herfindahl-Hirschman Index and discuss the limitations of concentration measures.
Describe the characteristics of monopolistic competition and an oligopoly.

HHI values below 100 indicate the market is highly competitive.

39. The primary monetary policy goal of most major central banks is *best* characterized as:

A. containing inflation.
B. stimulating economic growth.
C. maintaining low interest rates.

Answer = A

"An Overview of Central Banks," Anne Dolganos Picker
2011 Modular Level I, Vol. 2, p. 499
Study Session 6-28-a, b
Identify the functions of a central bank.
Discuss monetary policy and the tools utilized by central banks to carry out monetary policy.

Most major central banks' primary monetary policy goal is to contain inflation.

40. Externalities, in reference to a particular good, are *most likely* to impact:

A. sellers.
B. buyers.
C. someone other than buyers and sellers.

Answer = C

"Efficiency and Equity," Michael Parkin
2011 Modular Level I, Vol. 2, p. 50
Study Session 4-14-e
Explain 1) how efficient markets ensure optimal resource utilization and 2) the obstacles to efficiency and the resulting underproduction or overproduction, including the concept of deadweight loss.

An externality is a cost or benefit that affects someone other than the seller or the buyer of a good.

41. Generational accounting indicates the United States, as well as other developed nations, faces severe generational imbalances regarding government programs such as Social Security. Which of the following is *most likely* a possible outcome?

A. Reduction in income taxes.
B. Increase in government discretionary spending.
C. Creation of new money to pay government obligations.

Answer = C

"Fiscal Policy," Michael Parkin
2011 Modular Level I, Vol. 2, pp. 441-444
Study Session 6-26-c
Discuss the generational effects of fiscal policy, including generational accounting and generational imbalance.

Because the estimated fiscal balance is so large, the possible outcome will likely involve both lower benefits and higher taxes. One of these taxes could be the inflation tax – paying bills with new money and creating inflation.

42. The consumer price index (CPI) this year is 252. The CPI last year was 246. The inflation rate this year is *closest* to:

A. 2.38%.
B. 2.44%.
C. 6.00%.

Answer = B

"Monitoring Jobs and the Price Level," Michael Parkin
2011 Modular Level I, Vol. 2, p. 319
Study Session 5-22- d
Explain and calculate the consumer price index (CPI) and the inflation rate, describe the relation between the CPI and the inflation rate, and explain the main sources of CPI bias.

The inflation rate is measured as [(CPI this year – CPI last year) / CPI last year] × 100.
In this case, [(252 – 246) / 246] × 100 = 2.439%.

43. Land is *best* characterized as:

A. having perfectly inelastic supply.
B. being a nonrenewable natural resource.
C. being priced according to the Hotelling principle.

Answer = A

"Markets for Factors of Production," Michael Parkin
2011 Modular Level I, Vol. 2, pp. 288-290
Study Session 5-21-g
Differentiate between renewable and nonrenewable natural resources and describe the supply curve of each.

The supply of a given piece of land is perfectly inelastic because the quantity is fixed.

44. Which of the following is *least likely* to be a valid function/characteristic of money? Money:

A. acts as a unit of account.
B. provides a means of payment.
C. requires a double coincidence of wants.

Answer = C

"Money, the Price Level, and Inflation," Michael Parkin
2011 Modular Level I, Vol. 2, pp. 360-362
Study Session 6-24-a
Explain the functions of money.

The functions of money include being a means of payment, acting as a medium of exchange, acting as a unit of account, and acting as a store of value. It does not require a double coincidence of wants, as barter does.

Questions 45 through 68 relate to Financial Statement Analysis

45. At the start of a month, a retailer paid $5,000 in cash for different types of candies. He sold candies costing $2,000 for $3,000 during the month. The *most likely* effect of these transactions on the retailer's accounting equation for the month is that assets will:

A. be unchanged.
B. increase by $1,000.
C. decrease by $2,000.

Answer = B

"Financial Reporting Mechanics," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Karen O'Connor Rubsam, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, pp. 39-44, 52, 55
Study Session: 7-30-c
Explain the process of recording business transactions using an accounting system based on the accounting equations.

Buying $5,000 of candies will decrease cash by $5,000 and increase inventory by $5,000. Selling $2,000 of candies for $3,000 will decrease inventory by $2,000, and increase either cash (if cash collected in the same accounting period) or accounts receivable (if sold on credit) by $3,000. The combined effect is an increase of $1,000 in assets.

46. Which of the following statements *best* describes a trial balance? A trial balance is a document or computer file that:

A. shows all business transactions by account.
B. lists account balances at a particular point in time.
C. contains business transactions recorded in the order in which they occur.

Answer = B

"Financial Reporting Mechanics," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Karen O'Connor Rubsam, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, p. 67
Study Session: 7-30-f
Describe the flow of information in an accounting system.

A trial balance is a document that lists account balances at a particular point in time.

47. Under IFRS, which of the following financial statement elements *most* accurately represents inflows of economic resources to a company?

A. Assets.
B. Equity.
C. Revenues.

Answer = C

"Financial Reporting Mechanics," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Karen O'Connor Rubsam, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, pp.35-36, 39
Study Session: 7-30-a

Explain the relationship of financial statement elements and accounts, and classify accounts into the financial statement elements.

The financial statement elements under International Financial Reporting Standards (IFRS) are: Assets, Liabilities, Owners' Equity, Revenue, and Expenses. Revenues are inflows of economic resources. Assets are economic resources, but not inflows.

48. According to the IFRS framework, which of the following is the *least likely* qualitative characteristic that makes financial information useful?

A. Materiality.
B. Comparability.
C. Understandability.

Answer = A

"Financial Reporting Standards," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Karen O'Connor Rubsam, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, pp.106-108, 113
Study Session: 7-31-d
Describe the International Financial Reporting Standards (IFRS) framework, including the qualitative characteristics of financial statements, the required reporting elements, and the constraints and assumptions in preparing financial statements.

The four principal qualitative characteristics that make financial information useful are understandability, relevance, reliability and comparability. Materiality relates to the level of detail of the information needed to achieve relevance – whether the omission or misstatement of the information would impact the decision maker's decision.

49. Which of the following statements is *most* accurate?

A. Treasury stock is non-voting and receives no dividends.
B. Minority interest on the balance sheet represents a position the company owns in other companies.
C. A classified balance sheet arises when in an auditor's opinion the financial statements materially depart from accounting standards and are not presented fairly.

Answer = A

"Financial Statement Analysis: An Introduction," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, p.19
"Understanding the Balance Sheet International," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, pp. 201, 226

Study Session: 7-29-d; 8-33-a, g
Discuss the objective of audits of financial statements, the types of audit reports, and the importance of effective internal controls.
Illustrate and interpret the components of the balance sheet and discuss the uses of the balance sheet in financial analysis.
List and explain the components of owners' equity.

Treasury stock is non-voting and does not receive dividends.

50. The following information is available on a company for the current year.

Net income	$1,000,000
Average number of common shares outstanding	100,000
Details of convertible securities outstanding:	
Convertible preferred shares outstanding	2,000
o dividend/share	$10
o each preferred is convertible into 5 shares of common stock	
Convertible bonds, $100 face value per bond	$80,000
o 8% coupon	
o each bond is convertible into 25 shares of common stock	
Corporate tax rate	40%

The company's diluted EPS is *closest* to:

A. $7.57.
B. $7.69.
C. $7.72.

Answer = C

"Understanding The Income Statement," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, pp.170-178
Study Session: 8-32-g, h
Describe the components of earnings per share and calculate a company's earnings per share (both basic and diluted earnings per share) for both a simple and complex capital structure.
Differentiate between dilutive and antidilutive securities, and discuss the implications of each for the earnings per share calculation.

Since both the preferred shares and bonds are dilutive, they should both be converted to calculate the diluted EPS. Diluted EPS is the lowest value. $7.72 has calculated in the following table.

	Basic EPS	Diluted EPS: Bond converted	Diluted EPS: Preferred converted	Diluted EPS: Both converted
Net Income	$1,000,000	$1,000,000	$1,000,000	$1,000,000
Preferred Dividends	$(20,000)	$(20,000)		
After-tax cost of interest .08 x 80,000 x (1-.40)		$3,840		$3,840
Numerator	**$980,000**	**$983,840**	**$1,000,000**	**$1,003,840**
Average common shares outstanding	100,000	100,000	100,000	100,000
Preferred converted			10,000	10,000
Bond converted		20,000		20,000
Denominator	**100,000**	**120,000**	**110,000**	**130,000**
EPS	$9.80	$8.20	$9.09	$7.72

51. During 2010, Company A sold a piece of land with a cost of $6 million to Company B for $10 million. Company B made a $2 million down payment with the remaining balance to be paid over the next 5 years. It has been determined that there is significant doubt about the ability and commitment of the buyer to complete all payments. Company A would *most likely* report a profit in 2010 of:

A. $4 million using the accrual method.
B. $0.8 million using the installment method.
C. $2 million using the cost recovery method.

Answer = B

"Understanding The Income Statement," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, pp.150-152
Study Session: 8-32-b
Explain the general principles of revenue recognition and accrual accounting, demonstrate specific revenue recognition applications (including accounting for long-term contracts, installment sales, barter transactions, and gross and net reporting of revenue), and discuss the implications of revenue recognition principles for financial analysis.

Under the installment method, the portion of the total profit that is recognized in each period is determined by the percentage of the total sales price for which the seller has received cash. For Company A 2/10 x 4 = $0.8 million. Note, cost recovery method could be used in this case, but the reported profit would be $0.

52. A company's balance sheet shows the following:

	December 31, 2010
Current Assets	
Cash and cash equivalents	$ 2,950
Marketable securities	730
Notes and accounts receivable, trade	5,740
Allowance for doubtful accounts	(650)
Inventories	1,320
Deferred income taxes	1,160
Other current assets	690
Total current assets	**$ 11,940**
Current Liabilities	
Accounts payable and other accrued liabilities	$ 5,100
Current portion of borrowings	1,820
Other current liabilities	2,560
Total current liabilities	**$ 9,480**

The company's quick ratio is *closest* to:

A. 0.4.
B. 0.9.
C. 1.3.

Answer = B

"Understanding The Balance Sheet," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, pp. 212-216, 239
"Financial Analysis Techniques," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, pp. 329-330
Study Session: 8-33-d, 8-35-d
Compare and contrast current and noncurrent assets and liabilities.
Calculate, classify, and interpret activity, liquidity, solvency, profitability and valuation ratios.

Ratio	Formula	Calculation
Quick Ratio	$\frac{\text{Cash + Marketable Securities + Receivables}}{\text{Current Liabilities}}$	$\frac{2{,}950 + 730 + 5{,}740 - 650}{9{,}480} = \mathbf{0.93}$

53. The following information is from a company's investment portfolio:

Investment	
Classification	Held-to-maturity
Market value, 31 Dec 2009	$ 17,000
Cost/Amortized cost 31 Dec 2009	22,000
Market value, 31 Dec 2010	10,000
Cost/Amortized cost 31 Dec 2010	20,000

If the investment is reclassified as Available-for-sale as of 31 December 2010, the balance sheet carrying value of the company's investment portfolio would *most likely*:

A. remain the same.
B. decrease by $10,000.
C. decrease by $12,000.

Answer = B

"Understanding The Balance Sheet," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, p. 224
Study Session: 8-33-f
Demonstrate the appropriate classifications and related accounting treatments for marketable and nonmarketable financial instruments held as assets or owed by the company as liabilities.

Held-for-trading and available-for-sale securities are carried at market value, whereas held-to-maturity securities are carried at amortized cost. If the investment is reclassified as available-for-sale in 2010, the carrying amount should be adjusted to its market value, which is $10,000. Compared with the amortized cost of $20,000, it's a decrease of $10,000.

54. A company reports its interest payments on long-term debt as a financing activity under IFRS. If the company reports under U.S. GAAP, the *most likely* effect would be:

A. an increase in cash flow from operations.
B. a decrease in cash flow from investing activities.
C. an increase in cash flow from financing activities.

Answer = C

"Understanding The Cash Flow Statement," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, pp. 251-254
"International Standards Convergence," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, pp. 650-651

Study Session: 8-34-c, 10-43-c
Compare and contrast the key differences in cash flow statements prepared under international financial reporting standards and U.S. generally accepted accounting principles.
Identify and explain the major differences between international and U.S. GAAP accounting standards concerning the treatment of interest and dividends on the statement of cash flows.

Interest payments can be reported either as operating or financing cash flow under IFRS, but can only be reported as operating cash flow under U.S. GAAP. The interest payment was originally reported as financing activity under IFRS, but under U.S. GAAP, it would be an operating activity. Therefore, cash flow from financing activities would increase, and operating cash flows decrease by the same amount.

55. The following information (in millions) on a company is available:

Cost of goods sold	$ 500
Increase in total assets	250
Increase in total liabilities	200
Change in inventory	(30)
Change in accounts payable	(25)

The amount of cash (in millions) that the company paid to its suppliers is *closest* to:

A. $445.
B. $495.
C. $505.

Answer = B

"Understanding The Cash Flow Statement," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, pp. 268-269
Study Session: 8-34-f
Describe the process of converting a cash flow statement from the indirect to the direct method of presentation.

Cost of goods sold	$500
Less: Decrease in inventory	(30)
Equals purchases from suppliers	$470
Plus: Decrease in accounts payable	25
Cash paid to suppliers	$495

56. Which of the following statements is *most* accurate regarding cash flow ratios?

A. Interest coverage ratio is calculated as operating cash flow over interest payments.
B. Debt payment ratio measures the firm's ability to pay debts with operating cash flows.
C. Reinvestment ratio measures the firm's ability to acquire assets with investing cash flows.

Answer = B

"Understanding The Cash Flow Statement," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, p.289
"Financial Analysis Techniques," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, pp. 331-334
Study Session: 8-34-h, 8-35-d
Explain and calculate free cash flow to the firm, free cash flow to equity, and other cash flow ratios.
Calculate, classify, and interpret activity, liquidity, solvency, profitability, and valuation ratios.

Debt payment ratio (CFO ÷ Cash paid for long-term debt repayment) shows the firm's ability to pay debts with operating cash flows.

57. Which of the following is the *least* appropriate accounting treatment for marketable securities under IAS No. 39?

	Category	**Measurement Method**	**Realized Gains & Losses Reported In**
A.	Trading	Fair Value	Income Statement
B.	Held to maturity	Amortized Cost	Income Statement
C.	Available for sale	Fair Value	Equity

Answer = C

"International Standards Convergence," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol. 3, pp. 637-639
Study Session: 10-43-a, b
Identify and explain the major international accounting standards for each asset and liability category on the balance sheet and the key differences from U.S. generally accepted accounting principles (GAAP).
Identify and explain the major international accounting standards for major revenue and expense categories on the income statement and the key differences from U.S. GAAP.

All categories treat realized gains or losses in the same way - they are reported on the income statement. It is the unrealized gains and losses that are included in other comprehensive income (in equity) for available for sale securities carried at market value.

58. A U.S. pulp brokerage firm which prepares its financial statements according to U.S. GAAP and uses a periodic inventory system had the following transactions during the year:

Date	**Activity**	**Tons (000s)**	**$ per Ton**
	Beginning inventory	1	600
February	Purchase	5	650
May	Sale	2	700
August	Purchase	3	680
November	Sale	4	750

The cost of sales (in ‘000s) is *closest* to:

A. $3,850 using FIFO.
B. $4,080 using LIFO.
C. $5,890 using weighted average.

Answer = A

"Inventories,” Michael A. Broihahn, CFA
2011 Modular Level I, Vol.3, pp.382-386
Study Session: 9-36-c, e
Calculate cost of sales and ending inventory using different inventory valuation methods and explain the impact of the inventory valuation method choice on gross profit.
Compare and contrast cost of sales, ending inventory, and gross profit using different inventory valuation methods.

FIFO cost of sales is $3,850 as per the table.

Cost of Sales						
Weighted Average			**CGS FIFO**		**CGS LIFO**	
Available for sale						
Units (‘000s)	Cost $	Total cost ($ 000s)	Units sold	Total cost ($ 000s)	Units sold	Total cost ($ 000s)
1	600	600	1 x 600	600	3 x 680	2,040
5	650	3,250	5 x 650	3,250	3 x 650	1,950
3	680	2,040				
9	CGAS	$5,890	**Cost of sales**	**$3,850**	Cost of sales	$3,990
Unit Cost	$5,890/9 = $654.44					
Cost of	$654.44 x 6 = $3,926					

sales WA					

59. A review of a company’s inventory records for the year indicates that the following costs were incurred:

Fixed production overhead:	$500,000
Direct material and direct labor:	300,000
Storage costs incurred during production:	25,000
Abnormal waste costs:	30,000

If the company operated at full capacity during the year, the total capitalized inventory cost is *closest* to:

A. $800,000.
B. $825,000.
C. $855,000.

Answer = B

“Inventories,” Michael A. Broihahn, CFA
2011 Modular Level I, Vol. 3, pp. 379-380
Study Session 9-36-a
Distinguish between costs included in inventories and costs recognized as expenses in the period in which they are incurred.

The total capitalized costs include fixed production costs, the direct conversion costs of material and labor, storage costs required as part of production but not abnormal waste costs. $500,000 + 300,000 + 25,000 = $825,000

60. In a period of rising prices, when compared to a company that uses weighted average cost for inventory, a company using FIFO will *most likely* report higher values for its:

A. return on sales.
B. inventory turnover.
C. debt-to-equity ratio.

Answer = A

“Inventories,” Michael A. Broihahn, CFA
2011 Modular Level I, Vol. 3, pp. 381-384, 390, 394-395
Study Session 9-36-e, h
Compare and contrast cost of sales, ending inventory, and gross profit using different inventory valuation methods.
Calculate and interpret ratios used to evaluate inventory management.

In periods of rising prices FIFO results in a higher inventory value and a lower cost of goods sold and therefore a higher net income. The higher net income increases return on sales. The higher reported net income also increases retained earnings, and therefore results in a lower debt-to-equity ratio not a higher one. The combination of higher inventory and lower cost of goods sold decreases inventory turnover (CGS/inventory).

61. A company, which prepares its financial statements in accordance with IFRS is in the process of developing a more efficient production process for one of its primary products. The *most* appropriate accounting treatment for those costs incurred in the project is to:

A. expense them as incurred.
B. capitalize costs directly related to the development.
C. expense costs until technical feasibility has been established.

Answer = C

"Long-Lived Assets," Elaine Henry, CFA, and Elizabeth A. Gordon
2011 Modular Level I, Vol.3, pp. 418-419.
Study Session: 9-37-a
Distinguish between costs that are capitalized and costs that are expended in the period in which they are incurred.

Under IFRS research and development costs are expensed until certain criteria are met, including that technical feasibility has been established and the company intends to use it.

62. A Canadian printing company which prepares its financial statements according to IFRS has experienced a decline in the demand for its products. The following information relates to the company's printing equipment as of 31 December 2010.

	C$
Carrying value of equipment (net book value)	500,000
Undiscounted expected future cash flows	550,000
Present value of expected future cash flows	450,000
Fair Value	480,000
Costs to sell	50,000
Value in use	440,000

The impairment loss (in C$) is *closest* to:

A. 0.
B. 60,000.
C. 70,000.

Answer = B

"Long-lived Assets," Elaine Henry, CFA, and Elizabeth A. Gordon
2011 Modular Level I, Vol.3, pp.434-436
Study Session: 9-37-h
Discuss the impairment of property, plant, and equipment, and intangible assets.

Under IFRS, an asset is considered to be impaired when its carrying amount exceeds its recoverable amount (the higher of fair value less cost to sell or value in use).
Fair value less costs to sell: 480,000 – 50,000 = 430,000
Value in use = 440,000
Recoverable amount (higher value) = 440,000
Impairment loss under IFRS = Carrying value – recoverable amount = 500,000 – 440,000 = 60,000

63. A company which prepares its financial statements in accordance with IFRS incurred and capitalized €2 million of development costs during the year. These costs were fully deductible immediately for tax purposes, but the company is depreciating them over two years for financial reporting purposes. The company has a long history of profitability which is expected to continue. Which is the *most* appropriate way for an analyst to incorporate the differential tax treatment in his analysis? He should include it in:

A. liabilities when calculating the company's current ratio.
B. equity when calculating the company's return on equity ratio.
C. liabilities when calculating the company's debt-to-equity ratio.

Answer = C

"Income Taxes," Elbie Antonites, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol. 3, pp. 460, 485-486, 490
Study Session 9-38-i
Analyze disclosures relating to deferred tax items and the effective tax rate reconciliation, and discuss how information included in these disclosures affects a company's financial statements and financial ratios.

The different treatment for tax purposes and financial reporting purposes is a temporary difference and would create a deferred tax liability. Deferred tax liabilities should be classified as debt if they are expected to reverse with subsequent tax payments. The long history of profitability implies the company will likely be paying taxes in the following years and hence an analyst could reasonably expect the temporary difference to reverse. Under IFRS all deferred tax liabilities are non-current and therefore do not affect the current ratio.

64. A company issued $2,000,000 of bonds with a 20 year maturity at 96. Seven years later, the company called the bonds at 103 when the unamortized discount was $39,000. The company would *most likely* report a loss of:

A. $60,000.

B. $99,000.
C. $138,000.

Answer = B

"Non-Current (Long-term) Liabilities," Elizabeth A. Gordon and Elaine Henry, CFA
2011 Modular Level I, Vol. 3, pp. 511-514
Study Session: 9-39-a, c
Determine the initial recognition and measurement and subsequent measurement of bonds.
Discuss the derecognition of debt.

Redemption cost	$2,060,000	$2,000,000 x 103/100
Carrying amount retired	1,961,000	$2,000,000 – $39,000
Loss on redemption	**$99,000**	

65. A company has recently revalued one of its depreciable properties and estimated that its remaining useful life would be another 20 years. The applicable tax rate for all years is 30% and the revaluation of the property is not recognized for tax purposes. Details related to this asset are provided in the table below, with all £-values in millions.

	Accounting Purposes	**Tax Purposes**
Original values and estimates, start of 2007		
2007 Acquisition cost	£8,000	£8,000
Depreciation, straight-line	20 years	8 years
Accumulated depreciation end of 2009	£1,200	£3,000
Net balance end of 2009	£6,800	£5,000
Re-estimated values and estimates, start of 2010		
Revaluation balance start of 2010	£10,000	Not applicable
New estimated life	20 years	

The deferred tax liability (in millions) as at the end of 2010 is *closest to*:

A. £690.
B. £960.
C. £1,650.

Answer = A

"Income Taxes," Elbie Antonites, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol. 3, pp. 477-480
Study Session: 9-38-c, d, h
Determine the tax base of a company's assets and liabilities.

Calculate income tax expense, income tax payable, deferred tax assets, and deferred tax liabilities, and calculate and interpret the adjustment to the financial statements related to a change in the income tax rate.
Compare and contrast a company's deferred tax items.

	Accounting Purposes	Tax Purposes
Revaluation surplus	(10,000 – 6,800) =3,200	no revaluation allowed
Depreciation, straight-line	20 years	5 years remaining
2009 start of year balance after revaluation	10,000	5,000
Depreciation 2009	500	1,000
Net balance end of 2009	9,500	4,000
Less revaluation surplus	(3,200)	
Carrying value for purposes of deferred taxes	6,300	4,000
Deferred tax liability = 0.30 x (6,300 – 4,000) = **690**		
Only the portion of the difference between the tax base and the carrying amount that is not the result of the revaluation is recognized as giving rise to a deferred tax liability. The portion arising from the revaluation surplus is used to reduce the revaluation surplus in equity.		

66. Which of the following is *least likely* to be a warning sign of low quality earnings?

A. Greater use of operating leases than peer companies.
B. Use of a higher discount rate in pension plan assumptions.
C. A ratio of operating cash flow to net income greater than 1.0.

Answer = C

"Financial Reporting Quality: Red Flags and Accounting Warning Signs," Thomas R. Robinson, CFA, and Paul Munter
2011 Modular Level I, Vol. 3, pp. 562-563
Study Session: 10-40-b, e
Describe activities that will result in a low quality of earnings.
Describe common accounting warning signs and methods for detecting each.

A ratio of operating cash flow to net income below 1.0 (not above 1.0) can be a warning sign of low quality earnings.

67. If a nonfinancial company securitizes its accounts receivables for less than their book value, the *most likely* effect on the financial statements is to increase:

A. net income.
B. cash from operations.
C. cash from financing activities.

Answer = B

"Accounting Shenanigans on the Cash Flow Statement," Marc A. Siegel
2011 Modular Level I, Vol. 3, pp. 580-581
Study Session 10-41
The candidate should be able to analyze and discuss the following ways to manipulate the cash flow statement:

- stretching out payables,
- financing of payables,
- securitization of receivables, and
- using stock buybacks to offset dilution of earnings.

The securitization of accounts receivables for less than book value would result in a loss on the income statement, but an increase in the cash from operations, reflecting the proceeds received.

68. An analyst uses a stock screener and selects the following metrics: a global equity index, P/E ratio lower than the median P/E ratio, and a price-book value ratio lower than the median price-book value ratio. The stocks so selected would be *most* appropriate for portfolios of which type of investors?

A. Value investors.
B. Growth investors.
C. Market-oriented investors.

Answer = A

"Financial Statement Analysis: Applications," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn, CFA
2011 Modular Level I, Vol. 3, pp. 608-611
"Security Market Indices," Paul D. Kaplan, CFA, and Dorothy C. Kelly, CFA
2011 Modular Level I, Vol. 5, pp. 105
Study Session: 10-42-d; 13-56-k
Discuss the use of financial statement analysis in screening for potential equity investments.
Compare and contrast the types of security market indices

Metrics such as low P/E and low price-book are aimed at selecting value companies; therefore the portfolio is most appropriate for value investors.

Questions 69 through 78 relate to Corporate Finance

69. A company's optimal capital budget *most likely* occurs at the intersection of the:

A. net present value and internal rate of return profiles.
B. marginal cost of capital and net present value profiles.
C. marginal cost of capital and investment opportunity schedule.

Answer = C

"Capital Budgeting," John D. Stowe, CFA, and Jacques R. Gagne, CFA
2011 Modular Level I, Vol.4, pp 17-22
"Cost of Capital" Yves Courtois, CFA, Gene C. Lai, and Pamela Peterson Drake, CFA
2011 Modular Level I, Vol.4, pp. 45-46
Study Session 11-44-e, 11-45-d
Explain the NPV profile, compare and contrast the NPV and IRR methods when evaluating independent and mutually exclusive projects, and describe the problems associated with each of the evaluation methods.
Explain how the marginal cost of capital and the investment opportunity schedule are used to determine the optimal capital budget.

The point where the marginal cost of capital (MCC) intersects the investment opportunity schedule (IOS) is the optimal capital budget (see Figure 1 p.46).

70. Which of the following is *most likely* a sign of a good corporate governance structure?

A. Independent board members comprise a minority proportion on the company's board.
B. The separation of the chief executive position from the chair position on the company's board.
C. Independent board members are allowed to meet shareholders only in the presence of the entire board.

Answer = B

"The Corporate Governance of Listed Companies: A Manual for Investors"
2011 Modular Level I, Vol.4, p. 241
Study Session 11-50-b, c
Discuss and critique characteristics and practices related to board and committee independence, experience, compensation, external consultants, and frequency of elections, and determine whether they are supportive of shareholder protection.
Describe board independence and explain the importance of independent board members in corporate governance.

The CEO and board chair should be separated to prevent too much executive power.

71. A company's $100 par value preferred stock with a dividend rate of 9.5% per year is currently priced at $103.26 per share. The company's earnings are expected to grow at an annual rate of 5% for the foreseeable future. The cost of the company's preferred stock is *closest* to:

A. 9.2%.
B. 9.5%.
C. 9.7%.

Answer = A

"Cost of Capital," Yves Courtois, CFA, Gene C. Lai, and Pamela Peterson Drake, CFA
2011 Modular Level I, Vol. 4, pp. 50-51
"Equity valuation: Concepts and Basic Tools," John J. Nagorniak, CFA, and Stephen E. Wilcox, CFA
2011 Modular Level I, Vol. 5, pp. 276-279
Study Session 11-45-g, 14-60-d
Calculate and interpret the cost of noncallable, nonconvertible preferred stock.
Calculate the intrinsic value of a non-callable, non-convertible preferred stock.

$r_p = D_p / P_p$ (or Dividend / Price) = ($100 x 0.095) / $103.26 = 9.2%

72. Which is *most likely* considered a secondary source of liquidity?

A. Trade credit.
B. Liquidating long-term assets.
C. Centralized cash management system.

Answer = B

"Working Capital Management" Edgar A. Norton, Jr., CFA, Kenneth L. Parkinson, and Pamela Peterson Drake, CFA
2011 Modular Level I, Vol.4, pp. 159-160
Study Session 11-48-a
Describe primary and secondary sources of liquidity and factors that influence a company's liquidity position.

Liquidating long-term assets is a secondary source of liquidity.

73. Using the debt-rating approach to find the cost of debt is *most* appropriate when market prices for a company's debt are:

A. stable.
B. unreliable.
C. below par value.

Answer = B

"Cost of Capital," Yves Courtois, CFA, Gene Lai, and Pamela Peterson Drake, CFA
2011 Modular Level I, Vol. 4, p. 48
Study Session 11-45-f
Calculate and interpret the cost of fixed rate debt capital using the yield-to-maturity approach and the debt-rating approach.

The debt-rating approach is used when the market prices for debt are unreliable or non-existent.

74. A twenty-year $1,000 fixed rate non-callable bond with 8% annual coupons currently sells for $1,105.94. Assuming a 30% marginal tax rate and an additional risk premium for equity relative to debt of 5%, the cost of equity using the bond-yield-plus-risk-premium approach is *closest* to:

A. 9.9%.
B. 12.0%.
C. 13.0%.

Answer = B

"Cost of Capital," Yves Courtois, CFA, Gene Lai, and Pamela Peterson Drake, CFA
2011 Modular Level I, Vol. 4, pp. 47-48, 57
Study Session 11-45-f, h;
Calculate and interpret the cost of fixed rate debt capital using the yield-to-maturity approach and the debt-rating approach.
Calculate and interpret the cost of equity capital using the capital asset pricing model approach, the dividend discount model approach, and the bond-yield-plus-risk-premium approach.

First, you need to determine the yield-to-maturity, which is the discount rate that sets the bond price to $1,105.94 and is equal to 7%. This can be done with a financial calculator:
FV = -1,000, PV = 1,105.94, N = 20, PMT = -80, solve for I, which will equal 7%.
The bond-yield-plus-risk-premium approach is calculated by adding a risk premium to the cost of debt (i.e. the yield-to-maturity for the debt) making the cost of equity 12.00% (= 7% +5%).

75. Business risk *most likely* incorporates operating risk and:

A. sales risk.
B. financial risk.
C. interest rate risk.

Answer = A

"Measures of Leverage," Pamela Peterson Drake, CFA, Raj Aggarwal, CFA, Cynthia Harrington, CFA, and Adam Kobor, CFA

2011 Modular Level I, Vol. 4, pp. 94-95
Study Session 11-46-a
Define and explain leverage, business risk, sales risk, operating risk, and financial risk, and classify a risk, given a description.

Business risk is sales risk and operating risk combined.

76. If the degree of financial leverage (DFL) is 1.00, the operating breakeven point compared to the breakeven point, is *most likely*:

A. lower.
B. higher.
C. the same.

Answer = C

"Measures of Leverage," Pamela Peterson Drake, CFA, Raj Aggarwal, CFA, Cynthia Harrington, CFA, and Adam Kobor, CFA
2011 Modular Level I, Vol. 4, pp. 103-104, 110-112
Study Session 11-46-b, d, e
Calculate and interpret the degree or operating leverage, the degree of financial leverage, and the degree of total leverage
Calculate the breakeven quantity of sales and determine the company's net income at various sales levels.
Calculate and interpret the operating breakeven quantity of sales.

When DFL (= operating income ÷ net income) = 1.00, operating income = net income, meaning the fixed cost of debt is zero. The breakeven point is: (fixed costs + fixed cost of debt) ÷ contribution margin. Because the fixed cost of debt is zero, the company's breakeven point becomes: fixed costs ÷ contribution margin, which is the same as the operating breakeven point.

77. A company decides to repurchase 5 million of its outstanding 20 million shares with debt funding. After the repurchase, the company's after-tax earnings decline by 20%. The new earnings per share (EPS) is *most likely*:

A. equal to the pre-repurchase EPS.
B. less than the pre-repurchase EPS.
C. greater than the pre-repurchase EPS.

Answer = C

"Dividends and Share Repurchases: Basics," George H. Troughton, CFA, and Gregory Noronha, CFA
2011 Modular Level I, Vol. 4, pp. 141-143
Study Session 11-47-d

Calculate and compare the effects of a share repurchase on earnings per share when 1) the repurchase is financed with the company's excess cash and 2) the company uses funded debt to finance the repurchase.

The pre-repurchase EPS is EAT / 20 million. The EPS after the repurchase is (EAT × (1- 20%) / 15 million). To connect the two values algebraically:
(EAT / 20 million) × X = (EAT × (1- 20%) / 15 million)
X = (1 – 20%) × (20 million / 15 million) = 1.067
Because X is greater than one, the EPS has increased after the repurchase.

78. In a sales-driven pro forma analysis, retained earnings is *most* accurately forecasted as:

A. a percentage of forecasted sales.
B. previous retained earnings plus forecasted financing surplus or deficiency.
C. previous retained earnings plus forecasted net income less forecasted dividends.

Answer = C

"Financial Statement Analysis," Pamela Peterson Drake, CFA
2011 Modular Level I, Vol.4, p. 222
Study Session 11-49
The candidate should be able to demonstrate the use of pro forma income and balance sheet statements.

Within a sales-driven pro forma analysis, retained earnings is forecasted as previous retained earnings plus forecasted net income less forecasted dividends.

Questions 79 through 90 relate to Equity Investments

79. An investor buys a stock on margin. Assume that the interest on the loan and the dividend are both paid at the end of the holding period. The data related to the transaction are as follows:

Number of shares	500
Purchase price per share	$28
Leverage ratio	3.33
Commission	$0.05 / share
Position holding period	6 months
Sale price per share	$30
Call money rate	5% per year
Dividend	$0.40 / share

The investor's total return on this investment over the margin holding period is *closest* to:

A. 15.6%.
B. 16.7%.
C. 21.4%.

Answer = C

"Market Organization and Structure," Larry E. Harris
2011 Modular Level I, Vol. 5, pp. 43-45
Study Session 13-55-f
Calculate and interpret the leverage ratio, the rate of return on a margin transaction, and the security price at which the investor would receive a margin call.

Initial investment	[($28 x 500) x (1 / 3.33)] + ($0.05 x 500)	$4,225
- Purchase commission	$0.05 x 500	- 25
+ Trading gain	($30 - $28) x 500	1,000
- Margin interest paid	$9,800 x 0.025	- 245
+ Dividends received	$0.40 x 500	200
- Sales commission paid	$0.05 x 500	- 25
= Remaining equity		$5,130
Return on investment	($5,130 - $4,225) / $4,225	21.4%

80. In futures markets, contract performance is *most likely* guaranteed by:

A. clearing houses.
B. regulatory agencies.
C. the futures exchanges.

Answer = A

"Market Organization and Structure," Larry E. Harris
2011 Modular Level I, Vol. 5, pp. 23-24, 30, 38
Study Session 13-55-d
Describe the types of financial intermediaries and the services that they provide.

Clearing houses arrange for financial settlement of trades. In futures markets, they guarantee contract performance.

81. An equity fund manager is considering a market index as benchmark for his portfolio and he has the following preferences:

- the index should have a contrarian "effect";
- shares held by controlling shareholders should not be excluded;
- dividends should be included in the weighting of constituent securities; and
- the weights of constituent securities should not be arbitrarily determined by the index provider.

Which of the following weightings of indices *best* meets the fund manager's preferences?

A. Equal.
B. Fundamental.
C. Float-adjusted market-capitalization.

Answer = B

"Security-Market Indices," Paul D. Kaplan, CFA, and Dorothy C. Kelly, CFA
2011 Modular Level I, Vol. 5, pp. 90-98
Study Session 13-56-d
Compare and contrast the different weighting methods used in index construction.

Fundamental weighting satisfies the fund manager's preferences. Fundamental indices use a single measure, such as total dividends, to weight the constituent securities. Fundamentally weighted indices generally will have a contrarian "effect" in that the portfolio weights will shift away from securities that have increased in relative value and toward securities that have fallen in relative value whenever the portfolio is rebalanced. All shares are included in a fundamental weighted index.

82. Which of the following is the *most* accurate characterization of momentum anomalies? Momentum anomalies:

A. relate to long-term price patterns.
B. relate to short-term price patterns.
C. are consistent with weak-form market efficiency.

Answer = B

"Market Efficiency," W. Sean Cleary, CFA, Howard J. Atkinson, CFA, and Pamela Peterson Drake, CFA
2011 Modular Level I, Vol. 5, pp. 143-144
Study Session 13-57-f
Discuss identified market pricing anomalies and explain possible inconsistencies with market efficiency.

Momentum anomalies relate to short-term price patterns, typically resulting from investor overreaction in response to the release of unexpected public information.

83. The advantages to an investor owning convertible preference shares of a company *most likely* include:

A. less price volatility than the underlying common shares.
B. preference dividends that are fixed contractual obligations of the company.
C. an opportunity to receive additional dividends if the company's profits exceed a pre-specified level.

Answer = A

"Overview of Equity Securities," Ryan C. Fuhrmann, CFA, and Asjeet S. Lamba, CFA
2011 Modular Level I, Vol. 5, pp. 175-176
Study Session 14-58-d, f
Discuss the differences in voting rights and other ownership characteristics among various equity classes.
Compare and contrast the risk and return characteristics of various types of equity securities.

Convertible preference shares tend to exhibit less price volatility than the underlying common shares because the dividend payments are known and more stable

84. A company has issued only one class of common shares and it does not pay dividends on them. It has also issued two types of preference shares – one that is putable and the other callable – and both have a non-cumulative feature. Which of these securities will *most likely* offer the lowest expected return to the investor?

A. Common shares.
B. Putable preference shares.
C. Callable preference shares.

Answer = B

"Overview of Equity Securities," Ryan C. Fuhrmann, CFA, and Asjeet S. Lamba, CFA
2011 Modular Level I, Vol. 5, pp. 175, 187

Study Session 14-58-d, f
Discuss the differences in voting rights and other ownership characteristics among various equity classes.
Compare and contrast the risk and return characteristics of various types of equity securities.

Putable preference shares are less risky than their callable counterparts. They give the investor the option to put the shares back to the company. Because of the lower risk they will provide a lower expected rate of return. Common shares are the most risky, whether or not they are dividend paying, and are likely to offer the highest expected return.

85. An industry experiencing slow growth, high prices, and volumes insufficient to achieve economies of scale is *most likely* in the:

A. mature stage.
B. shakeout stage.
C. embryonic stage.

Answer = C

"Introduction to Industry and Company Analysis," Patrick W. Dorsey, CFA, Anthony M. Fiore, CFA, and Ian Rossa O'Reilly, CFA
2011 Modular Level I, Vol. 5, p. 235
Study Session 14-59-g
Describe product and industry life-cycle models, classify an industry as to life-cycle phase (e.g., embryonic, growth, shakeout, maturity, or decline) based on a description of it, and discuss the limitations of the life-cycle concept in forecasting industry performance.

An embryonic industry is one that is just beginning to develop and is characterized by slow growth, high prices, volumes not yet sufficient to achieve meaningful economies of scale, developing distribution channels, and low brand loyalty as there is low customer awareness of the industry's product.

86. Which of the following industries is *most likely* characterized by low barriers to entry, fierce competition, fragmented structure, and weak pricing power?

A. Restaurants.
B. Proprietary drugs.
C. Credit card processing.

Answer = A

"Introduction to Industry and Company Analysis," Patrick W. Dorsey, CFA, Anthony M. Fiore, CFA, and Ian Rossa O'Reilly, CFA
2011 Modular Level I, Vol. 5, pp. 226-230
Study Session 14-59-h

Explain the effects of industry concentration, ease of entry, and capacity on return on invested capital and pricing power.

Restaurants industry is characterized by low barriers to entry because anyone with a modest amount of capital and some culinary skill can open a restaurant. The industry, however, is fragmented which can lead to fierce competition and weak pricing power.

87. A fund manager compiles the following data on two companies:

	Company A	Company B
Return on assets	10.9%	9.0%
Return on equity	15.4%	14.3%
Dividend payout ratio	0.35	0.30
Required return on equity	13.0%	12.4%
Weighted average cost of capital	11.8%	11.7%

Based on the information provided, the *most* accurate conclusion is that Company A's stock is more attractive relative to that of Company B's because of its:

A. smaller P/E ratio.
B. greater financial leverage.
C. higher dividend growth rate.

Answer = A

"Financial Analysis Techniques," Thomas R. Robinson, CFA, Jan Hendrik van Greuning, CFA, Elaine Henry, CFA, and Michael A. Broihahn
2011 Modular Level I, Vol. 3, pp. 342-343
"Equity Valuation: Concepts and Basic Tools," John J. Nagorniak, CFA, and Stephen E. Wilcox, CFA
2011 Modular Level I, Vol. 5, pp. 290-291
Study Session 8-35-f, 14-60-h
Demonstrate the application of and interpret changes in the component parts of the DuPont analysis (the decomposition of return on equity).
Calculate and interpret the following multiples: price to earnings, price to an estimate of operating cash flow, price to sales, and price to book value.

From the computations shown below Company A's stock is more attractive because of its smaller P/E ratio than Company B's stock.

	Company A	Company B
Dividend growth rate (g)	15.4 (1-0.35) = 10.0%	14.3 (1-0.30) = 10.0%
P/E ratio = $\frac{\text{dividend payout ratio}}{\text{Required ROE} - g}$	0.35 / (0.13-0.10) = 11.7x	0.30 / (0.124-0.10) = 12.5x
Financial leverage (ROE / ROA)	15.4 / 10.9 = 1.4x	14.3 / 9.0 = 1.6x

88. An investor wants to determine the intrinsic value of the common stock for a company with the following characteristics:

- The firm maintains a constant dividend payout ratio
- Goodwill and patents account for 40% of the firm's assets
- The firm's revenues and earnings are highly correlated with the business cycle

Further, the investor focuses on the firm's capacity to pay dividends rather than expected dividends. Considering the above, the investor will *most likely* use which of the following valuation models?

A. Asset-based valuation model.
B. Free-cash-flow-to-equity model.
C. Gordon dividend growth model.

Answer = B

"Equity Valuation: Concepts and Basic Tools," John J. Nagorniak, CFA, and Stephen E. Wilcox, CFA
2011 Modular Level I, Vol. 5, pp. 270-276, 300-301
Study Session 14-60-c, f, j
Explain the rationale for using present-value of cash flow models to value equity and describe the dividend discount and free cash flow to equity models.
Identify companies for which the constant growth or a multistage dividend discount model is appropriate.
Explain asset-based valuation models and demonstrate the use of asset-base models to calculate equity value.

Free-cash-flow-to-equity (FCFE) is a measure of the firm's dividend-paying capacity which should be reflected in the cash flow estimates rather than expected dividends. Analysts must make projections of financials to forecast future FCFE and thus the constant growth assumption as in the Gordon growth model is not an issue. An asset-based valuation model is not appropriate considering the high proportion of intangibles (goodwill and patents) in the firm's assets.

89. An investor considering the enterprise value approach to valuation gathers the following data:

EBITDA	$65.8 million
Value of debt	$90.0 million
Value of preferred stock	$25.4 million
Cash & marketable securities	$6.9 million
Number of common shares outstanding	12.5 million
Firm's tax rate	30%
Appropriate EV/EBITDA multiple	6x

The value per share of the company's common stock is *closest* to:

A. $13.43.
B. $22.35.
C. $22.90.

Answer = C

"Equity Valuation: Concepts and Basic Tools," John J. Nagorniak, CFA, and Stephen E. Wilcox, CFA
2011 Modular Level I, Vol. 5, pp. 297-299
Study Session 14-60-i
Explain the use of enterprise value multiples in equity valuation and demonstrate the use of enterprise value multiples to estimate equity value.

First, compute the enterprise value (EV) from EBIDTA x EV/EBITDA multiple.
Then determine market capitalization (value of equity) using the following expression (see p. 297). Finally, compute the value per share.
EV = Market capitalization + MV of preferred stock + MV of debt – Cash and investments
Market capitalization = EV – MV of Preferred stock – MV of debt – Cash and investments
Value per share = Market capitalization/Number of outstanding shares

Enterprise value = 65.8 x 6	394.8
- Value of debt	(90.0)
- Value of preferred stock	(25.4)
+ Cash & marketable securities	6.9
= Market capitalization or Value of equity	286.3
Value per share = 286.3 / 12.5	$22.90

90. An analyst attempting to value the shares of a company has gathered the following data:

Return on equity	12%
Dividend payout ratio	40%
Required rate of return on shares	15%
Current year's dividend per share	$3.60

Using the Gordon growth model, the intrinsic value per share is *closest* to:

A. $36.96.
B. $46.15.
C. $49.49.

Answer = C

"Equity Valuation: Concepts and Basic Tools," John J. Nagorniak, CFA, and Stephen E. Wilcox, CFA
2011 Modular Level I, Vol. 5, pp. 279-281
Study Session 14-60-e
Calculate and interpret the intrinsic value of an equity security based on the Gordon (constant) growth dividend discount model or a two-stage dividend discount model, as appropriate.

g = b x ROE; b = earnings retention rate = (1 – Dividend payout ratio)
$D_1 = D_0 (1 + g)$; $V_0 = D_1 / (r – g)$
b = 1 – 0.40 = 0.60; g = 0.60 x 12 = 7.2%;
D_1 = 3.60 (1.072) = $3.86; V_0 = 3.86 / (0.15 – 0.072) = $49.49

Questions 91 through 96 relate to Derivative Investments.

91. In contrast to over-the-counter options, futures contracts:

A. are not exposed to default risk.
B. are private, customized transactions.
C. represent a right rather than a commitment.

Answer = A

"Derivative Markets and Instruments," Don M. Chance.
2011 Modular Level I, Vol. 6, pp. 8-12.
Study Session 17-68-a, c
Define a derivative and differentiate between exchange-traded and over-the-counter derivatives.
Differentiate among the basic characteristics of forward contracts, futures contracts, options (calls and puts), and swaps.

A is correct. Over-the counter options are exposed to default risk but futures contracts are standardized transactions that take place on futures exchanges and are not exposed to default risk.

92. An investor purchases 10 futures contracts priced at $100 each. The initial margin is $20 per contract and the maintenance margin requirement is $10 per contract. The investor will *most likely* be required to post variation margin if the end-of-day prices over the next three days are:

	Day 1	Day 2	Day 3
A.	$103	$109	$104
B.	$106	$98	$89
C.	$95	$91	$103

Answer = B

"Derivative Markets and Instruments," Don M. Chance
2011 Modular Level I, Vol. 6, pp 55-59
Study Session 17-70-d
Describe price limits and the process of marking to market, and calculate and interpret the margin balance, given the previous day's balance and the change in the futures price.

B is correct. $110 of variation margin is required since the $90 margin balance after Day 3 is below the $100 maintenance margin. The $110 variation margin will re-establish the $200 initial margin.
The calculation is below:

Day 1 activity: $260 closing margin balance results from $200 initial margin plus $60 gain ($6 increase X 10 contracts)
Day 2 activity: $180 closing margin balance results from $260 opening margin balance minus $80 loss ($8 decline X 10 contracts)
Day 3 activity: $90 closing margin balance results from $180 opening margin balance minus $90 loss ($9 decline X 10 contracts)

93. Based on put-call parity for European options, a synthetic put is *most likely* equivalent to a:

A. long call, short underlying asset, long bond.
B. long call, long underlying asset, short bond.
C. short call, long underlying asset, short bond.

Answer = A

Derivative Markets and Instruments," Don M. Chance
2011 Modular Level I, Vol. 6, pp 110-113
Study Session 17-71-m

Explain put-call parity for European options, and relate put-call parity to arbitrage and to the construction of synthetic options.

A is correct. A Synthetic Put is equivalent to a Long Call + Short Underlying + Long Bond.

94. Which of these statements is *most likely* correct for an option?

A. Market price equals intrinsic value less time value.
B. Intrinsic value equals market price less time value.
C. Time value equals intrinsic value less market price.

Answer = B

Derivative Markets and Instruments," Don M. Chance
2011 Modular Level I, Vol. 6, pp 99-100
Study Session 17-71-i
Define intrinsic value and time value, and explain their relationship.

B is correct, the market price of an option equals its intrinsic value plus its time value.

95. Which statement *best* describes option price sensitivities? The value of a:

A. call option increases as interest rates rise.
B. put option increases as volatility decreases.
C. put option decreases as interest rates decline.

Answer = A

"Derivative Markets and Instruments," Don M. Chance
2011 Modular Level I, Vol. 6, pp 117-118
Study Session 17-71-p
Indicate the directional effect of an interest rate change or volatility change on an option's price.

A is correct. Call options increase in value as interest rates rise.

96. A company and its bank have entered into a currency swap in which the company pays USD to the bank. The currency swap details are provided below:

	Notional	FX Rate	Swap Rate	# Days Period	# Days Year
Company	USD130,000,000	USD 1.30	4.00%	180	360
Bank	EUR100,000,000	EUR 1.00	2.00%	180	360

Which of these interest payments will *most likely* be made by one of the parties in the transaction?

A. Bank will make a payment of USD 1,000,000.
B. Bank will receive a payment of USD 2,600,000.
C. Company A will receive a payment of EUR 1,300,000.

Answer = B

"Derivative Markets and Instruments," Don M. Chance
2011 Modular Level I, Vol. 6, pp. 136-140
Study Session 17-72-b
Define, calculate, and interpret the payments of currency swaps, plain vanilla interest rate swaps and equity swaps.

B is correct because the company pays USD 130,000.000 × 0.04 × 180/360 = USD 2,600,000

Questions 97 through 108 relate to Fixed Income Investments.

97. An investment banking firm offers a corporation a binding bid to purchase an amount of new debt securities to be issued by the corporation with a specified coupon rate and maturity. The corporation can accept or reject this bid. This type of security distribution is *best* described as:

A. best efforts.
B. bought deal.
C. competitive bidding.

Answer = B

"Overview of Bond Sectors and Instruments," Frank J. Fabozzi, CFA
2011 Modular Level I, Vol. 5, pp. 427-428
Study Session 15-63-k
Describe the mechanisms available for placing bonds in the primary market and differentiate the primary and secondary markets in bonds.

B is correct because bought deal underwriting occurs when an underwriter solicits securities from an issuer and the issuer accepts the offer.

98. A bond market analyst states, “The current term structure of interest rates is upward sloping which implies the market believes short-term interest rates will rise in the future.” Which theory of the term structure of interest rates does the analyst *most likely* believe?

A. Pure expectations theory.
B. Liquidity preference theory.
C. Market segmentation theory.

Answer = A

“Understanding Yield Spreads,” Frank J. Fabozzi, CFA
2011 Modular Level I, Vol. 5, pp. 453-455
Study Session 15-64-c
Explain the basic theories of the term structure of interest rates and describe the implications of each theory for the shape of the yield curve.

A is correct because under the pure expectations theory the only reason the yield curve will be upward sloping is because market participants believe that short-term rates will rise in the future.

99. An investor who has a 42% marginal tax rate is analyzing a tax-exempt bond that offers a yield of 3.74%. The taxable-equivalent yield of the bond is closest to:

A. 5.31%.
B. 6.45%.
C. 8.90%.

Answer = B

“Understanding Yield Spreads,” Frank J. Fabozzi, CFA
2011 Modular Level I, Vol. 5, pp. 464-465
Study Session 15-64-i
Calculate the after-tax yield of a taxable security and the tax-equivalent yield of a tax-exempt security.

B is correct because the tax-equivalent yield of a tax-exempt security is

$$taxable - equivalent\ yield = \frac{tax - exempt\ yield}{(1 - m\arg inal\ tax\ rate)} = \frac{3.74\%}{(1-.42)} = 0.064483 = 6.45\%\ .$$

100. A bond portfolio manager is considering three Bonds – A, B, and C – for his portfolio. Bond A allows the issuer to call the bond before stated maturity, Bond B allows the investor to put the bond back to the issuer before stated maturity, and Bond C contains no embedded options. The bonds are otherwise identical. The manager tells his assistant, "Bond A and Bond B should have larger nominal yield spreads to a U.S. Treasury than Bond C to compensate for their embedded options." Is the manager *most likely* correct?

A. Yes.
B. No, Bond A's nominal yield spread should be less than Bond C's.
C. No, Bond B's nominal yield spread should be less than Bond C's.

Answer = C

"Understanding Yield Spreads," Frank J. Fabozzi, CFA
2011 Modular Level I, Vol. 5, pp. 461-462
Study Session 15-64-g
Identify how embedded options affect yield spreads.

C is correct because Bond B's embedded put option benefits the investor and the yield spread will therefore be less than the yield spread of Bond C, which does not contain this benefit.

101. If the appropriate annual discount rate is 6%, the value of a 3-year bond that has a 7% coupon rate, has a maturity (par) value of $1,000, and pays interest annually is *closest to*:

A. $973.76.
B. $1,026.73.
C. $1,049.17.

Answer = B

"Introduction to the Valuation of Debt Securities," Frank J. Fabozzi, CFA
2011 Modular Level I, Vol. 5, pp. 489-491
Study Session 16-65-c
Calculate the value of a bond and the change in value that is attributable to a change in the discount rate.

B is correct because $\frac{70}{1.06^1}+\frac{70}{1.06^2}+\frac{1{,}070}{1.06^3}=66.04+62.30+898.39=1{,}026.73$.

102. If the price of a U.S. Treasury security is higher than its arbitrage-free value, a dealer can generate an arbitrage profit by:

A. shorting the U.S. Treasury security and calling it from the issuer.
B. shorting the U.S. Treasury security and reconstituting it from strips.
C. buying the U.S. Treasury security, stripping it and selling the strips.

Answer = B

"Introduction to the Valuation of Debt Securities," Frank J. Fabozzi, CFA
2011 Modular Level I, Vol. 5, pp. 507-510
Study Session 16-65-f
Explain the arbitrage-free valuation approach and the market process that forces the price of a bond toward its arbitrage-free value, and explain how a dealer can generate an arbitrage profit if a bond is mispriced.

B is correct because strips can be purchased to create a synthetic U.S. Treasury security to cover the short at a price lower than the price at which the U.S. Treasury security was shorted, generating a profit.

103. The bond-equivalent yield (BEY) spot rates for U.S. Treasury yields are provided below.

Period	**Years**	**Spot Rate**
1	0.5	1.20%
2	1.0	2.10%
3	1.5	2.80%
4	2.0	3.30%

On a BEY basis, the 6-month forward rate one year from now is *closest to*:

A. 2.10%.
B. 3.64%.
C. 4.21%.

Answer = C

"Yield Measures, Spot Rates, and Forward Rates," Frank J. Fabozzi, CFA
2011 Modular Level I, Vol. 5, pp. 567-571
Study Session 16-66-h
Explain a forward rate and calculate spot rates from forward rates, forward rates from spot rates, and the value of a bond using forward rates.

C is correct because, the x-year forward rate y-years from now ${}_{x}f_{y} = \frac{(1+z_{x+y})^{x+y}}{(1+z_{y})^{y}} - 1$. All spot rates are given on a BEY basis and must be divided by 2 in this calculation, or

${}_{0.5}f_{1.0} = \frac{(1+(0.028/2))^{3}}{(1+(0.021/2))^{2}} - 1 = 0.021036$. On a BEY basis, the forward rate is 0.021036×2=4.21%

104. Holding all other characteristics the same, the bond exposed to the greatest level of reinvestment risk is *most likely* the one selling at:

A. par.
B. a discount.
C. a premium.

Answer = C

"Yield Measures, Spot Rates, and Forward Rates," Frank J. Fabozzi, CFA
2011 Modular Level I, Vol. 5, pp. 543-544
Study Session 16-66-c
Explain the importance of reinvestment income in generating the yield computed at the time of purchase, calculate the amount of income required to generate that yield, and discuss the factors that affect reinvestment risk.

C is correct because a bond selling at a premium has a higher coupon rate and, all else the same, bonds with higher coupon rates face higher reinvestment risk. This is because the higher the coupon rate, the more dependent the bond's total dollar return will be on the reinvestment of the coupon payments in order to produce the yield to maturity at the time of purchase.

105. A 6% 25-year bond with semiannual payments has a market price of \$850.00. The yield to maturity of this bond is *closest to*:

A. 5.72%
B. 7.32%.
C. 7.91%.

Answer = B

"Yield Measures, Spot Rates, and Forward Rates," Frank J. Fabozzi, CFA
2011 Modular Level I, Vol. 5, pp. 538-539
Study Session 15-66-b
Calculate and interpret the traditional yield measures for fixed-rate bonds and explain their limitations and assumptions.

B is correct because the yield to maturity is the discount rate that equates the price of the bond (\$850.00) with its cash flows (49 semiannual cash flows of \$30 and a 50th cash flow of \$1,030) or $\$850=\frac{\$30}{(1+ytm/2)^1}+\frac{\$30}{(1+ytm/2)^2}+\ldots+\frac{\$30}{(1+ytm/2)^{49}}+\frac{\$1{,}030}{(1+ytm/2)^{50}}$. Using a financial calculator to find this yield to maturity provides 7.32%.

106. Which of these definitions of duration is *most* relevant to a bond investor? A bond's duration is its:

A. half-life.
B. price sensitivity to yield changes.
C. first derivative of value with respect to its yield.

Answer = B

"Introduction to the Measurement of Interest Rate Risk," Frank J. Fabozzi, CFA
2011 Modular Level I, Vol. 5, pp. 630-631.
Study Session 15-67-f
Distinguish among the alternative definitions of duration and explain why effective duration is the most appropriate measure of interest rate risk for bonds with embedded options.

B is correct because bond investors are concerned about interest rate risk, and duration is a good measure of interest rate risk.

107. A bond has duration of 4.50 and convexity of -39.20. If interest rates increase by 0.5%, the percentage change in the bond's price will be *closest to*:

A. -2.35%.
B. -2.25%.
C. -2.15%.

Answer = A

"Introduction to the Measurement of Interest Rate Risk," Frank J. Fabozzi, CFA
2011 Modular Level I, Vol. 5, pp. 622, 633-635
Study Session 16-67-h
Describe the convexity measure of a bond and estimate a bond's percentage price change, given the bond's duration and convexity and a specified change in interest rates.

A is correct because when convexity is known the percentage change in a bond's price = $(-\text{duration} \times \Delta y \times 100) + (C \times (\Delta y)^2 \times 100) = (-4.50 \times 0.005 \times 100) + (-39.20 \times 0.005^2 \times 100) = -2.35$.

108. A portfolio consists of four bonds with the following characteristics:

Bond	Market Value	Duration
A	$1.2 million	3.2
B	$3.4 million	7.6
C	$2.9 million	12.4
D	$1.6 million	1.5

The duration of the portfolio is *closest to*:

A. 5.40.
B. 6.18.
C. 7.48.

Answer = C

"Introduction to the Measurement of Interest Rate Risk," Frank J. Fabozzi, CFA
2011 Modular Level I, Vol. 5, pp. 632-633
Study Session 16-67-g
Calculate the duration of a portfolio, given the duration of the bonds comprising the portfolio, and explain the limitations of portfolio duration.

C is correct because the duration of a portfolio is the weighted average of the bonds' durations where the weight for each bond is its contribution to the portfolio's value or $w_{bond}=Value_{bond}/Value_{portfolio}$ and $Duration_{portfolio}=\Sigma w_{bond} \times duration_{bond}$. In this case, value of the portfolio is 1.2+3.4+2.9+1.6 = 9.1 million and the portfolio duration equals (1.2/9.1 × 3.2) + (3.4/9.1 × 7.6) + (2.9/9.1 × 12.4) + (1.6/9.1 × 1.5) = 0.4220 + 2.8396 + 3.9516 + 0.2637 = 7.48.

Questions 109 through 114 relate to Alternative Investments.

109. An office building with net operating income of $75,000 recently sold for $937,500. Financial data for a comparable building that is currently on the market for sale is presented in the table below.

	Annual income or expense
Gross potential rental income	$300,000
Estimated vacancy and collection losses	4%
Insurance and taxes	$27,000
Utilities	$14,000
Repairs and maintenance	$21,000
Depreciation	$15,000
Interest rate on proposed financing	7%

The estimated value for the building being sold using the income approach is *closest* to?

A. $2,825,000.
B. $2,975,000.
C. $3,228,500.

Answer = A

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2011 Modular Level I, Vol. 6, pp. 205-207
Study Session 18-74-f
Calculate the net operating income (NOI) from a real estate investment, the value of a property using the sales comparison and income approaches, and the after-tax cash flows, net present value, and yield of a real estate investment.

A is correct because to arrive at the estimated value of the property, subtract operating expenses from gross income (300,000 – (4% x300,000 or 12,000) – 27,000 – 14,000 – 21,000 = 226,000). Then divide the net operating income by the cap rate which is derived from the recent transaction (226,000/(75,000/937,500) = 226,000/.08 = 2,825,000). Note that neither depreciation nor financing costs are deducted as operating expenses.

110. An initial investment of $1 million in a venture capital project is expected to pay $10 million at the end of 5 years if it is successful. The probabilities of failure for the project are provided in the table below:

Year:	1	2	3	4	5
Failure Probability:	0.30	0.25	0.20	0.20	0.20

If the cost of capital for the project is 18%, the project's expected NPV is *closest* to:

A. -$731,200.
B. $174,950.
C. $906,150.

Answer = B

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2011 Modular Level I, Vol. 6, pp. 216-218
Study Session 18-74-h
Calculate the net present value (NPV) of a venture capital project, given the project's possible payoff and conditional failure probabilities.

B is correct because you calculate the probability of success as (1-.30) ×(1-.25) ×(1-.20) ×(1-.20)×(1-.20)=.2688. Then calculate the NPV from success $\frac{10{,}000}{1.18^5} - 1{,}000 = 3{,}371{,}092 \times .2688 = 906{,}150$ Subtracting the NPV of failure, -1,000*(1-.2688 or .7312) = -731,200. The difference between the NPVs is the expected NPV of the project, 906,150-731,200=174,950.

111. An investor in exchange traded funds (ETFs) is *most likely* to benefit from its:

A. end of day pricing.
B. lack of tracking error risk.
C. lower capital gains tax liability relative to mutual funds.

Answer = C

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2011 Modular Level I, Vol. 6, pp. 195-197
Study Session 18-74-c
Explain the advantages and risks of ETFs.

C is correct because the capital gain distribution is lower for ETFs than for mutual funds as sales of the underlying securities are not necessary to accommodate inflows/outflows as securities are transferred in kind to investors.

112. Which of the following statements is *least likely* an advantage of investing in hedge funds through a fund of funds? Funds of funds provide:

A. an increase in expected return through diversification.
B. expertise in selecting funds and conducting due diligence.
C. access to successful funds that may otherwise be closed to new investors.

Answer = A

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2011 Modular Level I, Vol.6, pp. 223-224
Study Session 18-74-j
Explain the benefits and drawbacks to fund of funds investing.

A is correct because diversification results in risk reduction, not return enhancement. Further, the fees charged by the fund of funds manager will likely reduce returns relative to direct hedge fund investment.

113. In estimating the value of inactively traded securities of a closely held corporation, which of the following is applied to the market value of a publicly traded comparable company?

A. Control premium.
B. Marketability discount.
C. Minority interest discount.

Answer = B

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2011 Modular Level I, Vol. 6, pp. 231-233
Study Session 18-74-n
Describe alternative valuation methods for closely held companies, and distinguish among the bases for the discounts and premiums for these companies.

B is correct because to estimate a marketability discount for a closely held company, the analyst identifies a publicly traded comparable company with a liquid market. The comparable's market value of equity is the base to which the marketability discount is applied.

114. An index provider has created a new investable index that tracks the hedge fund industry. Any fund that follows a long/short equity strategy can enter the index. The index provider places new constituents in the index at the end of each year and incorporates the new funds' track record in the database. Which of the following is *least likely* a bias that might distort the historical performance of the index?

A. Backfilling.
B. Self-selection.
C. Tracking error.

Answer = C

"Alternative Investments," Bruno Solnik and Dennis McLeavey
2011 Modular Level I, Vol. 6, pp. 227-229
Study Session 18-74-l
Discuss the performance of hedge funds, the biases present in hedge fund performance measurement, and explain the effect of survivorship bias on the reported return and risk measures for a hedge fund database.

C is correct because this is not a bias that is associated with distorting the performance of a hedge fund index. Tracking error is a risk more commonly associated with mutual funds and ETFs when their investments deviate significantly from those in the index it is benchmarked against. Many hedge funds pursue absolute returns and may deviate materially from indices.

Questions 115 through 120 relate to Portfolio Management.

115. With respect to the portfolio management process, asset allocation decisions are made in the:

A. planning step.
B. feedback step.
C. execution step.

Answer = C

"Portfolio Management: An Overview," Robert M. Conroy, CFA and Alistair Byrne, CFA

2011 Modular Level I, Vol. 4, p. 292
Study Session 12-51-c
Describe the steps in the portfolio management process.

C is correct. Asset allocation decisions are made in the execution step.

116. A key difference between a wrap account and a mutual fund is that wrap accounts:

A. have a lower required minimum investment.
B. can not be tailored to the tax needs of a client.
C. have assets that are owned directly by the individual.

Answer = C

"Portfolio Management: An Overview," Robert M. Conroy, CFA, and Alistair Byrne, CFA
2011 Modular Level I, Vol. 4, p. 305
Study Session 12-51-d
Describe, compare, and contrast mutual funds and other forms of pooled investments.

C is correct. The key difference between a wrap account and a mutual fund is that in a wrap account the assets are owned directly by the individual.

117. An analyst observes that the historic geometric returns are 9% for equities, 3% for treasury bills, and 2% for inflation. The real rate of return and risk premium for equities are *closest* to:

A. 5.8% and 3.7%.
B. 6.9% and 3.8%.
C. 6.9% and 5.8%.

Answer = B

"Portfolio Risk and Return: Part I," Vijay Singal, CFA
2011 Modular Level I, Vol. 4, p. 327
Study Session 12-52-a
Calculate and interpret major return measures and describe their applicability.

B is correct. $(1 + 0.09)/(1 + 0.02) – 1 = 6.9\%$ $(1 + 0.069)/(1 + 0.03) – 1 = 3.8\%$

118. If Investor A has a lower risk aversion coefficient than Investor B, on the capital allocation line, will Investor B's optimal portfolio have a higher expected return?

A. Yes.
B. No, since Investor B has a lower risk tolerance.
C. No, since Investor B has a higher risk tolerance.

Answer = B

"Portfolio Risk and Return: Part I," Vijay Singal, CFA
2011 Modular Level I, Vol. 4, p. 350
Study Session 12-52-d
Explain risk aversion and its implications for portfolio selection.

B is correct. Investor B has a higher risk aversion coefficient, therefore a lower risk tolerance and a lower expected return on the capital allocation line.

119. Information for Stock A and the market appear below:

Standard deviation of Stock A's return	40%
Standard deviation of the market's return	20%
Correlation of Stock A with the market	85%

The beta of Stock A is *closest* to:

A. 0.43.
B. 1.70.
C. 2.35.

Answer = B

"Portfolio Risk and Return: Part II," Vijay Singal, CFA
2011 Modular Level I, Vol. 4, pp. 411-412
Study Session 12-53-e
Calculate and interpret beta.

B correct. 0.85*0.40/0.20=1.70

120. A portfolio manager decides to temporarily invest more of a portfolio in equities than the investment policy statement prescribes, because he expects equities will generate a higher return than other asset classes. This decision is *most likely* an example of:

A. rebalancing.
B. tactical asset allocation.
C. strategic asset allocation.

Answer = B

Basics of Portfolio Planning and Construction," Alistair Byrne, CFA, and Frank E. Smudde, CFA
2011 Modular Level I, Vol. 4, pp. 450, 467, 477
Study Session 12-54-g

Discuss the principles of portfolio construction and the role of asset allocation in relation to the IPS.

B is correct. Tactical asset allocation is the decision to deliberately deviate from the policy exposures to systematic risk factors with the intent to add value based on forecasts of the near-term returns of those asset classes.