FinQuiz.com

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Questions 1 through 6 relate to Ethical and Professional Standards

Alpha and Beta Associates (A&B) Case Scenario

Alpha and Beta Associates (A&B) is a small U.S. based investment management firm that provides asset management services to private wealth clients. Ryan Becker is the chief investment officer (CIO) at A&B who oversees a team of portfolio managers and research analysts at the firm. Becker has just assigned two clients to Adam Levin, a portfolio manager. When Levin reviewed the clients' IPS, he determined that Client A was in the later stage of his life and wanted to minimize risk and increase cash flow certainty. Client B, on the other hand, was young, had no dependents, and had a job in a stable industry. After a comprehensive analysis of the clients, and a meeting with each of them, Levin made the following statements to the clients with regards to appropriate investment opportunities:

Client A: "Since your risk tolerance is low you should shift a portion of your investments from equity to bank-sponsored fixed certificates of deposit. This will ensure that your principal is 'guaranteed' up to the insured limit."

Client B: "Even though you can tolerate significant risk, I would still advise you to invest at least a portion of your investment in agency CMOs, like 'interest-only strips'. These derivatives are 'guaranteed' by the U.S. government and hence, limit your risk."

Levin is evaluating the future of the technology sector and is trying to pick stocks that would promise above-average returns. For this, he followed business news and read publications in financial and technology journals. Levin recently read an article published in 'The Capital Markets'. The article was written by Walter Laws, a financial journalist and a technology industry analyst. The article stated that technology stocks were going to outperform the market over the next quarter, and that this trend was expected to continue in the near future. Levin decided to use this information in his own paper, so he contacted Laws' firm to get a copy of the original article. He then included the complete study in his paper and cited only Walter Laws.

After writing his paper, Levin met with Becker to discuss the future of the utilities sector. Levin knew that Becker is a senior analyst, and has gained considerable trust and respect in his field. During a discussion with Levin, Becker stated that due to changes in the market and industry structure, he believes the major utilities giants will see a drastic drop in earnings in the coming quarter. Becker continued by stating that he was going to change his 'buy' recommendation to 'sell' and was going to express his opinion in an interview on a global news channel the next day. After his talk with Becker, Levin decided to ask his brother, who worked in the utilities industry for ten years, to advise him on buying or selling utilities stocks. He stated that Levin should follow the 'sell' recommendation, since he believed that the industry was going to see a downfall. Levin quickly sold 10,000 utilities shares that he held in his own portfolio.

Levin is responsible for the management of two equity funds: The Beta Fund and The Equatic Fund. Both funds have 5% of their worth invested in the stock of QUIN Technologies, but their investment guidelines indicate this to be an excessive amount. Because QUIN's stock has low liquidity in the stock market, Levin decided to trade portions of the stock back and forth between the two funds so as to increase liquidity. Due to his trading, Levin managed to bring the amount invested within the guidelines of the two funds.

Levin recently attended a seminar where he met his friend John Ryder, a mutual fund portfolio manager. While talking to Ryder, Levin found out that one of his new clients is also an investor in Ryder's fund. He stated that this meant that they now share a responsibility to the client.

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1. With respect to his comments to his clients, is Levin *most likely* in violation of the Standard I(C) 'Misrepresentation' of the Standards of Professional Conduct?

   A. No.
   B. Only with respect to Client A.
   C. Only with respect to Client B.

   Correct Answer: C

   Reference:
   Level II of CFA Program Volume 1, Study Session 1, Reading 2, LOS a

   Levin is not in violation with respect to Client A. Bank-sponsored certificates are insured by the government so using the term 'guaranteed' in this context is not inappropriate.

   Levin is in violation with respect to Client B. Although the underlying mortgages are guaranteed by the government, the interest stream on the IOs is not, which changes when interest rates in the market change.

2. With respect to the inclusion of the article in his paper, is Levin *most likely* in violation of Standard I(C), Misrepresentation?

   A. No.
   B. Yes, because he did not mention 'The Capital Markets' in references.
   C. Yes, because he did not make efforts to determine whether the study was comprehensive and not misrepresented.

   Correct Answer: A

   Reference:
   Level II of CFA Program Volume 1, Study Session 1, Reading 2, LOS a

   Levin is not in violation. Since Levin has obtained the complete study from the original author, he need only cite that author and not the intermediary.

3. With respect to trading utilities shares, did Levin violate Standard II(A), Material Nonpublic Information?

   A. No.
   B. Yes, because he traded on Becker's advice before it became public.
   C. Yes, because he traded on his brother's advice before it became public.

   Correct Answer: B

   Reference:
   Level II of CFA Program Volume 1, Study Session 1, Reading 2, LOS a

   Levin violated the Standard because he traded on Becker's change of opinion. Becker is a renowned analyst, and his appearance on the TV channel where he would discuss the changed recommendation is bound to have a material impact on the stock. On the other hand, Levin's brother is not a reliable source, so trading on his advice is not a violation.

4. With respect to the Beta and Equatic Funds, has Levin *most likely* violated Standard II(B), Market Manipulation?

   A. Yes.
   B. No, because he was working in the best interest of his clients.
   C. No, because he did not manipulate the market with the intentions of profiting from the trading.

   Correct Answer: A

Reference:
Level II of CFA Program Volume 1, Study Session 1, Reading 2, LOS a

Even though Levin's trading will benefit the fund's participants, his actions are leading to an artificial distortion of trading volume, and, in turn, the price of the stock.

5. With respect to his statement to Ryder, is Levin *most likely* correct?

   A. No.
   B. Yes, because both Ryder and Levin have a duty of loyalty to the client.
   C. Yes, because both Ryder and Levin need to work together toward the management of the client's needs.

Correct Answer: A

Reference:
Level II of CFA Program Volume 1, Study Session 1, Reading 2, LOS b

Ryder is incorrect. Ryder's responsibility is to manage the fund according to the IPS of the fund. His actions should not be influenced by the needs of any particular fund investor.

6. Which of the following about proxy voting policies is *most likely* in accordance with the Standards of Professional Conduct?

   A. An investment manager can vote with management on non-routine governance issues without consulting the client.
   B. An investment manager need not vote all proxies if a cost-benefit analysis indicates that voting all proxies is not beneficial.
   C. Although proxies have economic value to a client, voting proxies is not an integral part of the management of investments.

Correct Answer: B

Reference:
Level II of CFA Program Volume 1, Study Session 1, Reading 2, LOS b

An investment manager need not vote all proxies if a cost-benefit analysis indicates that voting all proxies may not benefit the client. Options A and C are incorrect.

Questions 7 through 12 relate to Ethical and Professional Standards

Quench Beverages (QB) Case Scenario

Quench Beverages (QB) is a manufacturer and distributor of various types of beverages. QB is situated in the country of Lexcorn. The country's regulations concerning securities trading are relatively relaxed compared to its neighboring countries. QB has recently hired Mona Smith, CFA, to provide advisory services for its investment portfolio.

On her first day at work, Smith relies on a research report prepared by her brother, who works at an equity research firm, to purchase the stock of Line plc. She purchases the report at a discount from the price quoted in the market. After considerable research on research providers, Smith comes to the conclusion that her brother has the most expert insight on manufacturers such as Line plc. However, to avoid the appearance of any conflict, she tells colleagues that she will be relying on a leading expert report to make purchases of the Line plc stock for her clients' portfolios. Local regulations do not require disclosures by investment advisors in this regard.

Immediately after making the stock allocation, Smith is contacted by her previous client, Rice Growers. The company's CEO is extremely pleased with the annual performance achieved by Smith when she was managing the company's portfolio as their investment advisor. The CEO offers Smith a fully paid trip to the Bahamas. The trip funding also includes hotel accommodation and tickets to a beach cruise. After checking with local laws and firm policies, Smith accepts the offer and puts in an application for a holiday in writing. She discloses details of the trip to her supervisor on her return.

On her first day back on the job, Smith receives a letter from Line plc's CEO inviting her to visit the company's manufacturing facility. The purpose of the visit is purely educational and is undertaken to learn more about the strength of the company's operating and governance structures as well as reaffirm her reasons for selecting the Line plc stock for clients' portfolios.

During her visit, Smith overhears two production managers discussing plans for organizing a union strike for demanding an increase in wages. The conversation stops as soon as the managers realize that an outsider is present.

Smith returns to her desk and shares the news with her brother who tells her that a production strike of any scale has the potential to shrink Line plc's market share especially given the fact that it operates in a fiercely competitive market. He instructs Smith to sell the stock and immediately issues a flash report with a sell rating.

QB's management is extremely pleased with Smith's performance as investment advisor. She is requested to prepare a brochure which includes an introduction and explains her performance results. Smith prepares the following statements:

Statement 1: "The CFA Program is a rigorous course of study which equips candidates such as me with top-of-the-line portfolio management skills."

Statement 2: "The current year has been an exceptional performance year for me and QB. If we continue to have access to top quality research, I can foresee a replication of the performance achieved for many years to come."

'O Hara Traders is one of QB's competitors. The firm's CEO, Paul Jones, contacts Smith after learning about her exemplary performance from QB's brochure. He offers Smith a part-time investment advisor position which will involve managing the firm's recently established investment portfolio for a fee. Smith responds by stating that she will need to think over the offer.

Smith feels that more emphasis should be placed on drafting policies which address the conflict between local laws and the Code and Standards as well as how individuals should deal with situations in which there is a violation of law. She drafts the following two policies:

Policy 1: Investment professionals should always comply with the strictest regulations even if it contradicts with the Code and Standards.

Policy 2: If an employee has come to know that an impending client activity, which is yet to materialize, is illegal, he or she should bring up the matter with a regulatory authority.

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7. In order to comply with requirements and recommendations of the CFA Institute Standards of Professional Conduct, Smith's *best* course of action with respect to relying on her brother's report would be to:

   A. avoid purchasing the stock as it constitutes a conflict of interest.
   B. seek permission from her employer prior to relying on the report.
   C. provide a written disclosure of the fees offered and her relationship with her brother to QB.

   Correct Answer: C

   Reference:
   Level II of CFA Program Volume 1, Study Session 1, Reading 2, LOS b

   C is correct. Because of her relationship with the report writer, the discount offered to Smith by her brother may constitute a conflict of interest requiring disclosure. The discount may be perceived by her client and employer (both QB) as a special favor bestowed upon Smith because she is related to the report writer. Therefore, to eliminate any doubt, best practice would dictate that she discloses her relationship with the report writer and the discounted fees offered by him to QB. Standard VI (A) Disclosure of Conflicts requires members and candidates to make full and fair disclosure of all matters that could reasonably be expected to impair their independence and objectivity. All actual and potential conflicts of interest should be disclosed.

A is incorrect. Smith can purchase the stock as long as she makes the necessary disclosure. There is considerable evidence to indicate that she did not select her brother's research report just because of her relationship to him but rather has undertaken thorough and independent investigation prior to selecting the research report for purchase. Therefore, Smith has grounds to rely on the report's recommendation and purchase the Line plc stock for QB's portfolio.

B is incorrect. Smith is not required to seek permission from her employer prior to purchasing the stock.

8. By accepting the trip, Smith is *most likely* in violation of the standards relating to:

   A. loyalty.
   B. knowledge of the law.
   C. additional compensation arrangements.

Correct Answer: C

Reference:
Level II of CFA Program Volume 1, Study Session 1, Reading 2, LOS a

C is correct. Smith is in violation of Standard IV (B) Additional Compensation Arrangements because she accepted the trip offer from Rice Growers without obtaining written consent from Rice Growers and QB. The standard prohibits members and candidates from accepting benefits, gifts, compensation, or consideration that competes with or might reasonably be expected to create a conflict of interest with their employer's interest unless they obtain a written consent from all the parties involved. Rice Growers is a former client and the acceptance of the trip may be perceived as Smith still maintaining loyalties with the client.

A is incorrect. Although Smith has been dishonest with her employer when concealing the fact that the trip was funded by her former client, such conduct does not injure the firm, deprive it of profit, and/or deprive it of her skills and abilities, and is thus not a violation of Standard IV (A) Loyalty.

B is incorrect. There are is a lack of information concerning local (Lexcorn) regulations which cover acceptance of trips from external parties. Thus, any conflict between the Code and Standards and local laws on this matter cannot be determined. Therefore, Smith is not in violation of Standard I (A) Knowledge of the Law.

9. In context of the discussion concerning the Line plc's production strike plans, which of the following individuals is *most likely* in violation of the standard relating to material and nonpublic information?

    A. Smith only.
    B. Smith's brother only.
    C. Both of the siblings.

    Correct Answer: C

    Reference:
    Level II of CFA Program Volume 1, Study Session 1, Reading 2, LOS a

    C is correct. Smith is in violation of the standards relating to the material and nonpublic information because she shared material information regarding the production strike with her brother and thus caused him to act on the information. Because the production strike was being privately discussed between production managers, Smith should have known that the information is material and nonpublic. Standard II (A) requires that members and candidates who possess material and nonpublic information that could affect the value of the investment should not act or cause others to act on the information. Even though Smith was initially not aware of the impact of the production strike, she had sufficient data to conclude that the information is material and nonpublic.

    Smith's brother is also in violation of the standard relating to material and nonpublic information because he acted on the information by issuing a sell rating.

10. Which of Smith's statements is *most likely* in violation of the CFA Institute Standards of Professional Conduct?

    A. Statement 1 only.
    B. Statement 2 only
    C. Both of the statements.

    Correct Answer: A

    Reference:
    Level II of CFA Program Volume 1, Study Session 1, Reading 2, LOS a

A is correct. Smith's first statement is in violation of the CFA Institute Standards of Professional Conduct because she has incorrectly referred to herself as a candidate of the CFA program when she is actually a member of the program and eligible to use the 'CFA' marks after her name. Standard VII (B) Reference to CFA Institute, the CFA Designation and the CFA Program prohibits members and candidates from misrepresenting membership in CFA Institute, holding the CFA designation, or candidacy in the CFA Program. Smith's untrue statement is construed as misrepresentation. The standards do not prohibit individuals from giving their opinion on the CFA Program and its quality as such conduct is not covered by the standards.

Smith's second statement is not in violation of the CFA Institute Standards of Professional Conduct because she is not attempting to make performance guarantees but is merely making a performance prediction which is contingent on the availability of sound research.

11. Can Smith accept Jones' offer without violating Standard IV Duties to Employers?

    A. Yes, as long as she receives consent prior to acceptance.
    B. Yes, as long as she refuses to accept any compensation.
    C. No, she cannot accept independent assignments which compete with her employer.

    Correct Answer: A

    Reference:
    Level II of CFA Program Volume 1, Study Session 1, Reading 2, LOS b

    A is correct. Standard IV (A) Loyalty recommends members and candidates to not undertake independent practice for compensation until they receive consent from their employer to all the terms of the agreement. Giving investment advice to 'O Hara Traders represents competing practice for which members and candidates must receive employer consent prior to engagement.

12. Which of the following statements *most* accurately explains whether the two policies drafted by Smith are consistent with the CFA Institute Code and Standards?

    A. Policy 1 is consistent; applicable law is the one which imposes a higher degree of responsibility.
    B. Policy 1 is inconsistent; members and candidates must not engage in any conduct that constitutes a violation of the Code and Standards.
    C. Policy 2 is consistent; members and candidates should disclose illegal activities to a concerned authority to avoid violating Code and Standards.

    Correct Answer: A

Reference:
Level II of CFA Program Volume 1, Study Session 1, Reading 2, LOS a, b

A is correct. Policy 1 is consistent with the Code and Standards. Standard I (A) Knowledge of the Law requires members and candidates to comply with the stricter law, rule or regulation. Members and candidates must comply with applicable laws or regulations related to their professional activities. Applicable law is the law which governs the member's or candidate's conduct. The stricter law is considered as the applicable law.

Policy 2 is inconsistent with the recommendation of the Standard I (A) Knowledge of the Law. CFA Institute strongly encourages members and candidates to report potential violations of the Code and Standards. Furthermore, the Code and Standards do not compel members and candidates to report violations to their governmental or regulatory organizations unless such disclosure is mandatory under applicable law. Therefore, if a member or candidate has reasonable grounds to believe that an imminent client activity is unethical or illegal, he or she should discuss the matter with the internal compliance department for guidance or the supervisor and only make disclosure to a regulatory organization if the disclosure is mandatory.

Questions 13 through 18 relate to Quantitative Methods

Quality Investment Advisory (QIA) Case Scenario

Quality Investment Advisory (QIA) is a U.S. based asset management firm providing financial advice and portfolio management services to both private wealth and institutional clients. Rob Wallace works as the chief portfolio manager at QIA's headquarters in Chicago, USA. Wallace is currently managing a $5 million portfolio of John Mackintosh, one of the firm's oldest high net worth private wealth clients. The portfolio invests a significant portion in the stocks of emerging markets, like those of Russia and Brazil. To estimate the returns to the Brazilian stock investments, Wallace specified a regression model with the dependent variable measuring the Brazilian stock returns and the independent variables measuring the percentage increase in the Brazilian Gross Domestic Product (GDP) and the returns to a broad-based Brazilian market index. Exhibit 1 displays the results to estimating this regression.

Exhibit 1
Regression Analysis Results

	Coefficient	Standard Error
Intercept	0.0095	0.013
Annual % increase in GDP	0.667	0.337
Annual return to Brazilian market index	2.245	0.245

ANOVA	
Regression Sum of Squares	0.9436
Residual Sum of Squares	0.3426
Observations	60

While talking to Mackintosh about the results of the regression, Wallace made the following comment:

Comment: "The interpretation of the slope coefficient of annual % increase in GDP is that for every 1 unit increase in GDP, we would expect returns to increase by 0.667 units. The coefficient value of 0.667 will remain constant even if we remove the second independent variable."

When Mackintosh inquired about the effect of changes in market return on the return to his Brazilian investment, Wallace stated that if we compare the returns to the investment at the beginning of a year with those at the end of the year during which time market return has increased by 1%, we would expect the returns to the investment to increase by 2.245%. However, he stated that to ensure that this holds true, we would have to calculate the F-statistic using data of the sum of squared residuals and the regression sum of squares.

After his meeting with Mackintosh, Wallace met Colin Edwards, a statistician at QIA's headquarters. Edwards has been working with Wallace toward the management of the U.S. stock portfolio of an institutional fund worth $25 million. In applying regression analysis to financial data, Edwards specified a multiple regression model to determine whether an increase in the U.S. literacy rate and a change in the technology industry's competitive structure have any effect on technology stocks' P/E multiples. While discussing the violations of regression assumptions with Wallace, Edwards stated that although heteroskedasticity does not affect the consistency of regression parameter estimates, it does however lead to mistakes in inference. Wallace stated that serial correlation, however, did affect the consistency of parameter estimates, but only if at least one of the independent variables is a lagged value of the dependent variable.

Wallace questioned Edwards about machine learning (ML) and its major forms. Edwards replied with the following statements.

i) Machine learning involves several approaches by which computer programs are used to learn from experience to improve performance.
ii) Supervised learning and unsupervised learning are two distinct classes of ML. The distinction between these categories is whether the technique makes or does not make use of labelled training data.
iii) Unsupervised learning analyzes X variable and there is no Y target variable set.

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13. Which of the following about the regression on Brazilian stock returns is *most* accurate using a critical value of 2.00 for the t-test statistics?

    A. The Brazilian stock returns are very closely related to the annual return to the Brazilian market index.
    B. The Brazilian stock returns are closely related to the annual % increase in GDP.
    C. The Brazilian stock returns are unrelated to the annual return to the Brazilian market index and to the annual % increase in GDP.

Correct Answer: A

Reference:
Level II of CFA Program Volume 1, Study Session 3, Reading 8, LOS c

We have to check the coefficients for significance.

The t-statistic for annual % increase in GDP: 0.667/0.337 = 1.979
The t-statistic for annual return to Brazilian market index = 2.245/0.245 = 9.163
Df = 60 – 3 = 57, at 0.05 significance level, critical t-statistic = 2.00

Hence, only the coefficient on the annual return to Brazilian market index is significant. Therefore, we can conclude that the stock returns are closely related to the Brazilian stock market index returns.

14. Using the information provided in Exhibits 1 and 2, the F-statistic is *closest* to:

    A. 2.754.
    B. 78.49.
    C. 79.87.

Correct Answer: B

Reference:
Level II of CFA Program Volume 1, Study Session 3, Reading 8, LOS g

$$\text{F-statistic} = \frac{\frac{RSS}{k}}{\frac{SSE}{[n-(k+1)]}} \quad (0.9436/2)/(0.3426/57) = 78.49$$

15. With respect to his comment, Wallace will *most likely* be correct only if the:

    A. second independent variable is uncorrelated with the annual % increase in GDP.
    B. intercept and the second independent variable are uncorrelated with the annual % increase in GDP.
    C. residuals of the regression represent the expected net effect on Brazilian stock returns of a 1 unit increase in annual GDP after removing that part of GDP that is correlated with the market index return.

Correct Answer: A

Reference:
Level II of CFA Program Volume 1, Study Session 3, Reading 8, LOS b

The coefficient on annual % increase in GDP will remain constant (even if the second variable is removed) only if the second variable (annual return to Brazilian market index) is uncorrelated with the annual % increase in GDP. Options B and C are incorrect.

16. With respect to the effect of changes in market return on the return to the Brazilian investment, Wallace is *least* accurate with respect to:

    A. the comparison of returns only.
    B. neither the comparison of returns nor the F-statistic.
    C. both the comparison of returns and the F-statistic.

    Correct Answer: C

    Reference:
    Level II of CFA Program Volume 1, Study Session 3, Reading 8, LOS b & g

    Wallace is incorrect with respect to the comparison of returns. The returns to the investment will not increase by 2.245% because the annual % increase in GDP might also change and will also impact the returns. Therefore, Wallace should interpret 2.245 as the expected increase in stock returns for a 1-unit increase in market index returns holding % increase in GDP constant.

    Wallace is also incorrect with respect to the F-statistic. Even if we assume that the % increase in GDP is held constant, to determine whether the coefficient on the % increase in the Brazilian market index is significantly different from 0, we need to perform a t-test. The F-test is viewed as a test of a regression's overall significance; this statistic is not used to test the significance of one independent variable in a multiple regression model.

17. With respect to the violations of regression assumptions, are Edwards and Wallace *most likely* correct?

    A. Only Edwards is correct.
    B. Only Wallace is correct.
    C. Both Edwards and Wallace are correct.

    Correct Answer: C

    Reference:
    Level II of CFA Program Volume 1, Study Session 3, Reading 8, LOS k

Edwards is correct. Heteroskedasticity does not affect the consistency of the regression parameter estimators. It does, however, lead to mistakes in inference.

Wallace is correct. If one of the independent variables is a lagged value of the dependent variable, then serial correlation will cause the estimates to be inconsistent.

18. Is Edwards' statements correct regarding Machine Learning and its forms?

Edwards is:

A. correct regarding all three statements.
B. incorrect regarding statement iii) only.
C. incorrect regarding statements ii) and iii).

Correct Answer: A

Reference:
Level II of CFA Program Volume 1, Study Session 3, Reading 8, LOS p

Edwards is correct with respect to all three statements.

Machine learning involves several approaches by which computer programs are used to learn from experience to improve performance.

Supervised learning and unsupervised learning are two distinct classes of ML. Supervised ML makes use of labelled training data whereas unsupervised does not make use of labelled training data.

Unsupervised learning analyzes X variable and there is no Y target variable set. In unsupervised ML there is no target to which we match the feature set.

Questions 19 through 24 relate to Financial Reporting Analysis

Silvan Miller Case Scenario

Silvan Miller is an independent financial analyst evaluating 2017 financial statements of Grecco, a textile manufacturer. Miller is of the opinion that Grecco's financial statements contain numerous discrepancies and so aims to evaluate their financial reporting quality. As a starting point, Miller summarizes his findings based on a preliminary analysis:
Finding 1: Grecco realized $30 million in profits on the sale of a spare spinning unit, originally purchased for manufacturing purposes. The gain is believed to be reported as part of continuing operations and is a material amount.

Finding 2: The amount of bad debt expenses reported during the year is most likely understated by $2 million.

Next, Miller collects data on Grecco's reported net income and net cash provided by operations for the fiscal years 2014 to 2016 (Exhibit). Miller strongly believes that the relationship between the two items is another potential source of financial misreporting.

Exhibit (in $ millions)

	2014	2015	2016
Net income	150	250	380
Net cash provided by operating activities	70	90	100

Miller has heard of the concept of mean reversion in earnings. He wonders how this concept applies to the data collected in the exhibit.

In an attempt to learn more about Grecco's financial reporting quality, Miller engages in a discussion with Octavia Taylor, another independent financial analyst who has followed Grecco and other textile manufacturers for a considerable number of years. In a discussion with Miller, she shares her perceptions concerning the reporting quality of the current year's financial statements:

Opinion 1: The operating expenses reported in the current year are nearly 50% less compared to what was reported in the financial year 2016. I strongly believe that this difference can only be attributed to a deliberate misclassification of operating expenses as non-operating on the income statement.

Opinion 2: In the notes to its financial statements, the management discloses two bill-and-hold sales arrangements with two of Grecco's major customers. Under the arrangement, goods have been shipped to a central warehouse belonging to Grecco. The goods will be shipped to the customers when demanded. Revenue related to the transactions has been recorded in the current year's income statement.

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19. Based only on the notes collected by Miller, Grecco's financial statements are *most likely* classified as:

    A. Unsustainable earnings.
    B. non-GAAP compliant.
    C. GAAP compliant, decision useful, sustainable and will help generate adequate returns.

    Correct Answer: A

    Reference:
    Level II of CFA Program Volume 2, Study Session 6, Reading 18, LOS a & b

    A is correct. Based on Finding 1, profits realized from the sale of a spinning unit are generally not recurring and therefore unsustainable. Furthermore, by reporting this non-recurring item as part of continuing operations, a portion of Grecco's profit from continuing operations is unsustainable.

    Reporting bad debt expense as part of continuing operations will inflate profits in the current year. However, this inflation in profits is one-time and unsustainable.

    B is incorrect. The notes do not indicate a departure from GAAP.

    C is incorrect. The notes indicate that the financial statements are neither decision useful nor sustainable because of the earnings management believed to have occurred. Therefore, low quality earnings will fail to provide an adequate level of return on investment.

20. If Note 2 is correct, the *least likely* impact of an understatement of bad debt expenses is an overstatement of the:

    A. net profit margin.
    B. asset turnover ratio.
    C. days of sales outstanding.

Correct Answer: B

Reference:
Level II of CFA Program Volume 2, Study Session 6, Reading 18, LOS h

B is correct. An understatement of bad debt expense will overstate the reported accounts receivable, which is an asset, and lead to an understated asset turnover ratio (Sales/Total Assets).

A is correct. An understatement of bad debt expense will overstate profits and the net profit margin (net profit/sales).

C is incorrect. Accounts receivable turnover is represented by the formula [accounts receivable/(total credit sales/number of days)]. An understated reported bad debt expense will overstate accounts receivable and the days of sales outstanding measure.

21. Based on the data collected in the Exhibit, Miller can conclude that Grecco's earnings are characterized by a high degree of:

   A. persistence.
   B. discretionary accruals.
   C. non-discretionary accruals.

Correct Answer: B

Reference:
Level II of CFA Program Volume 2, Study Session 6, Reading 18, LOS e

B is correct. Between 2014 and 2015, net income increased by about 67% and between 2015 and 2016, this increase was 152%.

During the same time, net cash provided by operating activities increased by 29% between 2014 and 2015 and increased by 11% between 2015 and 2016.

The rapid growth in net income is unmatched by the growth in net cash provided by operating activities. A decline in the growth of operating cash inflows could suggest that Grecco is reporting a large number of discretionary accruals with the intent to distort reported earnings.

A is incorrect. Because the accelerated growth in Grecco's net income compared to the declining growth in net cash provided by operating activities suggests the presence of discretionary accruals, the relative size of the accruals component of earnings will be larger relative to the cash component. Earnings with a larger component of accruals are less persistent.

C is incorrect. Non-discretionary accruals result from normal transactions and would have not created the difference in growth between the two items.

22. Based on the data collected in the Exhibit, Miller will conclude that the speed of mean reversion will be:

    A. slow.
    B. rapid.
    C. indeterminable based on the information provided.

    Correct Answer: B

    Reference:
    Level II of CFA Program Volume 2, Study Session 6, Reading 18, LOS g

    B is correct. When the growth in net income exceeds that of operating cash inflows, earnings will have a larger accrual component which may hasten the earnings' reversion to the mean; this is even more likely when the accrual elements are outliers relative to the normal amount of accruals in a company's earnings as is the case with Grecco.

23. A possible objective behind the misclassification of expenses (Opinion 1) is to:

    A. overstate net income.
    B. understate tax expense.
    C. overstate operating profit.

    Correct Answer: C

    Reference:
    Level II of CFA Program Volume 2, Study Session 6, Reading 18, LOS h

    C is correct. Operating expenses are deducted from a company's gross profit and used to determine operating profit. Therefore, misclassifying operating expenses as non-operating expenses can be construed as an attempt to overstate operating profit.

A is incorrect. Net income is not affected by the classification of operating expenses as non-operating as the expenses will be deducted either way to arrive at the final income figure.

B is incorrect. Similarly, the profit before tax figure is not affected if operating expenses are reported correctly or misclassified as non-operating. Hence, the tax expense figure will be the same regardless of how these expenses are reported.

24. Considering Opinion 2, Grecco's current year's earnings are *most likely*:

    A. overstated.
    B. understated.
    C. correctly stated.

Correct Answer: A

Reference:
Level II of CFA Program Volume 2, Study Session 6, Reading 18, LOS f

The bill-and-hold arrangement clearly demonstrates an attempt by Grecco to accelerate the recognition of revenues. Revenue associated with the transaction can only be recognized when the respective goods are delivered to the customer. The decision to accelerate revenue recognition will lead to an overstatement of Grecco's earnings.

Questions 25 through 30 relate to Equity Investments

Beth Hofer Case Scenario

Beth Hofer is an equity analyst that has been assigned the task of evaluating the financial performance of two construction firms: Sturdy Constructions (STUCON), and Walnut Constructions Company Limited (WALCO). Exhibits 1 and 2 display information about the financial vitals of STUCON that Hofer has accumulated for valuation purposes.

Exhibit 1
STUCON's financial information for years ending 31 December (in $ thousands)

	2010	2011
Income before taxes	105.34	121.65
Depreciation expense	55.11	59.43
Impairment of intangibles	23.74	15.46
Interest expense	17.20	22.06
Income resulting from the reversal of restructuring charges	14.54	11.88

*STUCON is taxed at a rate of 35%. STUCON's preferred dividends for the year 2011 were $9,000 and STUCON issued $10,000 worth of preferred stock during the same year.

Exhibit 2: Additional Information

	2010	2011
Cash	155.34	234.45
Accounts receivable	95.65	135.12
Inventory	67.75	99.45
Gross Fixed assets-No sale during the year	680.43	720.04
Accounts payable	60.20	70.06
Current portion of long-term debt	123.33	145.85
Notes payable	55.74	75.49
Long-term debt	75.47	80.54

After his analysis of STUCON's financial performance, Hofer proceeded with the valuation of Walnut Constructions. Hofer believes that the market values of construction companies are close to their intrinsic values, and hence, is planning to base her estimation on a market-based metric. WALCO's current earnings per share is $4.29. Exhibit 3 presents the trailing P/E multiples of WALCO's peer-group companies, along with other relevant data.

Exhibit 3
Trailing P/E ratios for WALCO's peer-group

Company	Trailing P/E	Long-term EPS Growth Forecast	Current ratio	Debt/Equity
AB	34.56	12%	1.19	1.00
BC	25.23	15%	1.35	1.02
CD	106.98	22%	0.55	3.56
DE	30.64	10%	0.98	1.98
EF	27.99	9%	0.67	2.35

Hofer then met with Julius James, a construction industry analyst at her investment firm. After reviewing the data Hofer had gathered for valuation purposes, James made the following comments:

Statement 1: "Ignoring the effects of risk and growth, WALCO's appropriate intrinsic value based on the trailing P/E multiples of its peer-group and its current EPS level is $193.39."

Statement 2: "To address the impact of long-term earnings growth prospects on P/E, you should estimate each company's PEG ratio using the growth forecasts provided. Stocks with lower PEGs are more attractive than stocks with higher PEGs."

As their discussion about P/E multiples continued, Hofer stated that equity market indices have also been used as comparison assets to determine over or undervaluation of stocks. She stated that according to the Yardeni model, higher expected corporate bond yields imply a lower justified market P/E and higher expected long-term growth results in a higher justified P/E. James agreed, and added that the Fed model did not account for the effect of changes in corporate profits since it did not consider the earnings growth rate in its prediction of future market returns.

25. STUCON's free cash flow to the firm for the year 2011 is *closest* to:

    A. \$55.
    B. \$65.
    C. \$67.

    Correct Answer: B

    Reference:
    Level II of CFA Program Volume 4, Study Session 11, Reading 30, LOS c & d

    FCFF=Net income +NCC+Int(1 – tax rate) – FCInv – WInv + Preferred dividends
    = [121.65(1–0.35)]+ 59.43+15.46 – 11.88+[22.06(1 – 0.35)] – (720.04-680.43) – (135.12-95.65) – (99.45 – 67.75)+(70.06 -60.20)+9
    =\$64.50

26. STUCON's free cash flow to equity for the year 2011 is *closest* to:

    A. \$57.
    B. \$76.
    C. \$98.

    Correct Answer: C

    Reference:
    Level II of CFA Program Volume 4, Study Session 11, Reading 30, LOS c & d

    FCFE =FCFF – Int(1 – tax rate)+Net borrowing – preferred dividends + Net issuance of preferred stock
    FCFE: \$64.50 – [\$22.06(1–0.35)] + \$47.34* – \$9 + \$10 = **\$98.5**

    *
    - Notes payable increased by 75.49 – 55.74 = 19.75
    - Long-term debt increased by 80.54 – 75.47 = 5.07
    - Current portion of long-term debt increased by 145.85-123.33 =22.52
    Net borrowing = 19.75 + 5.07 +22.52 = 47.34

27. STUCON *most likely* used most of its FCFE to:

    A. pay cash dividends to preferred stock holders.
    B. increase its balance of cash and cash equivalents.
    C. increase its net borrowing and issue new shares of preferred stock.

Correct Answer: B

Reference:
Level II of CFA Program Volume 4, Study Session 11, Reading 30, LOS g

STUCON has used most of its free cash flow to equity to increase its cash balance ($79.11). Issuance of shares of preferred stock is not a use of FCFE. Net borrowing is a use of FCFF.

28. With respect to Exhibit 3, which of the following companies appears to be the *most* undervalued relative to its peers?

    A. Company BC
    B. Company DE
    C. Company EF

Correct Answer: A

Reference:
Level II of CFA Program Volume 4, Study Session 11, Reading 31, LOS r

Company BC appears to be most undervalued because of lowest PEG ratio (25.23/15=1.68).

29. James is *most* accurate with respect to:

    A. Statement 1 only.
    B. Statement 2 only.
    C. both Statements 1 and 2.

Correct Answer: B

Reference:
Level II of CFA Program Volume 4, Study Session 11, Reading 31, LOS j & k

Statement 1 is incorrect. James has used the mean P/E to calculate an intrinsic value for WALCO, although the data clearly shows that Company CD is an outlier. James should have used the median P/E value or inverse price ratios since these measures mitigate the effect of outliers on the valuation conclusion.

Statement 2 is correct.

30. With respect to the Yardeni and Fed model, are Hofer and James *most likely* correct?

    A. Only Hofer is correct
    B. Both Hofer and James are correct
    C. Neither Hofer nor James is correct

Correct Answer: C

Reference:
Level II of CFA Program Volume 4, Study Session 11, Reading 31, LOS h

Hofer is incorrect. The Yardeni model defines the P/E ratio in terms of the *current* corporate bond yields and *expected* long-term growth.

James is incorrect. The Fed model does not incorporate the expected growth rate in earnings. However, the justified P/E predicted by the model *is* affected by small changes in interest rates and/or corporate profits (which determine earnings yields).

Questions 31 through 36 relate to Equity Investments

Dave Mitchell Case Scenario

Dave Mitchell is member of the portfolio management team that manages the domestic equity investments of a large U.S. pension fund. Mitchell just met with Chris Hann, the head of the pension committee, to discuss certain lucrative investment opportunities in the utilities industry. While talking to Mitchell, Hann stated that since the pension fund had an expected time horizon of 20 years, he wanted the fund to be invested in securities that offered attractive long-term returns. Mitchell shortlisted four firms in the utilities industry and presented their prospects to Hann. Exhibit 1 displays this information.

Exhibit 1
U.S. Utilities

Company	Consensus Growth Forecast (%)	Beta	Dividend Yield (%)	Payout Ratio (%)
Quarx	4.35	0.37	7.8	80
Zeto	11.67	0.73	4.1	66
FinX	16.91	0.54	2.31	35
Alpha	16.33	0.65	5.7	40

In addition to U.S. utilities, Mitchell is also evaluating the attractiveness of the telecommunication industry for inclusion in the pension fund and has narrowed down his selection to two large-cap telecommunication firms. Exhibit 2 presents selected information on the stocks of the two firms.

Exhibit 2
U.S. Telecommunication Stocks Per Share Dividends ($)

Period	Virtual Communications	WiLine Communications
3Q 2009	0.45	
4Q 2009	0.89	0.45
1Q 2010	0.87	
2Q 2010	0.56	0.95

*Both stocks are currently selling for $50/share

After his analysis, Mitchell made the following comments to Hann:

Statement 1: "Based on the trailing dividend yield of the two companies, I believe that compared to Virtual Communications, investing in WiLine Communications will reflect a greater orientation to the growth investment style."

Statement 2: "With regards to its relation to fundamentals, stocks that have higher betas should pay higher dividend yields."

Mitchell just read an article on the market-based valuation of companies. The article stated the use of enterprise value based multiples when applying the method of comparables and calculated the enterprise value for Hybrid Energy (HYEN), a renowned firm of the U.S. energy sector, selling for a current price of $45.09/share. Exhibit 3 displays financial information that the article presented.

Exhibit 3
HYEN's financial information (in $ millions)
for the year ended 31 December

Item	2010	Item	2010
Cash and cash equivalents	1,020	Preferred stock; 25 million shares	1.5
Short-term investments	105	Common stock; 230 million shares	11.50
Accounts payable	1,593	Minority interest	55
Current portion of long-term debt	45	Total equity	3,258
Long-term debt	750	Retained earnings	2,184

*Long-term debt has a market value of $890 million. Preferred Stock is selling for $35. Preferred dividends equaled $12 million.

The article compared HYEN with its competitors based on the EV/EBIT measure. It then ranked companies based on their EV/EBIT and total invested capital/EBIT values. Mitchell noticed that the ranking differed significantly based on the measure used to rank the companies. He decided to use the financial information to compare the companies using the EV/sales measure.

31. Which of the following companies should Mitchell *most likely* invest the pension fund in?

    A. FinX
    B. Alpha
    C. Quarx

    Correct Answer: B

    Reference:
    Level II of CFA Program Volume 4, Study Session 11, Reading 31, LOS d

    The pension fund should be invested in Alpha. Alpha offers the greatest combination of dividend yield and expected growth—22.03%. In addition, the low dividend payout ratio suggests that its dividend is subject to low risk. The pension fund has a long time horizon and should focus on 'total return'. Alpha is thus the best choice.

32. Mitchell is *most* accurate with respect to:

    A. Statement 1 only.
    B. Statement 2 only.
    C. neither Statement 1 nor Statement 2.

    Correct Answer: A

    Reference:
    Level II of CFA Program Volume 4, Study Session 11, Reading 31, LOS d

    Statement 1 is correct. The trailing dividend yield of Virtual Communications is (0.45+0.89+0.87+0.56)/50 = 5.54% and of WiLine Communications is (0.45+0.95)/50=2.8%. Since WiLine's dividend yield is lower, investment in WiLine will be consistent with a greater growth orientation.

    Statement 2 is incorrect. Higher betas result in higher required rates. However, it is not necessary for companies to increase dividends as reinvested earnings can generate capital gains to compensate investors.

33. HYEN's enterprise value in 2010 is *closest* to:

    A. $11,170.7 million.
    B. $12,135.7 million.
    C. $12,190.7 million.

Correct Answer: A

Reference:
Level II of CFA Program Volume 4, Study Session 11, Reading 31, LOS n

Total value of common equity: 230m ×$45.09 = $10,370.70 million
Total value of debt: = $890 million
Total value of preferred stock: 25m x $35 = $875 million
Minority Interest = $55 million
Cash and Cash equivalents = $1,020 million

Enterprise value: 10,370.70+890+875+55-1,020 = $11,170.7 million.

34. With regard to the article, which of the following is *most* accurate?

    A. Depreciation and amortization is a major expense for companies in the energy sector.
    B. Energy sector companies have significantly different capital structures.
    C. Energy sector companies differ in their investments in marketable securities and cash balances.

Correct Answer: C

Reference:
Level II of CFA Program Volume 4, Study Session 11, Reading 31, LOS m

The writer of the article has compared companies using the EBIT measure in the denominator. EBIT would be the appropriate choice if neither depreciation nor amortization is a major expense for the companies being compared. The difference in rankings based on TIC and EV indicates that there is a variation among energy companies in cash, cash equivalents, or marketable securities.

35. If HYEN's net income in 2010 was $900 million, and its interest, taxes, depreciation and amortization expenses were $65 million, $250 million, $421 and $12 million respectively, its EV/EBITDA ratio will be *closest* to (Assume EV of $11,362.95):

    A. 6.22.
    B. 6.89.
    C. 6.91.

    Correct Answer: B

    Reference:
    Level II of CFA Program Volume 4, Study Session 11, Reading 31, LOS n

    EBITDA: 900+65+250+421+12= $1,648 million
    EV/EBITDA = $11,362.95/1,648 = 6.89

36. Mitchell's preference to use the EV/Sales ratio rather than the P/S as a basis for a valid comparison of the companies is *most likely* because:

    A. energy companies generally do not issue preferred stock.
    B. the companies differ in their use of debt in their capital structures.
    C. market prices of energy companies vary significantly from intrinsic values.

    Correct Answer: B

    Reference:
    Level II of CFA Program Volume4, Study Session 11, Reading 31, LOS m

    The price to sales ratio fails to recognize differences in the capital structures of companies. EV/S is an alternative sales-based ratio that is particularly useful when comparing companies with diverse capital structures.

Questions 37 through 42 relate to Alternative Investments

A-Typical Investments (ATYP) Case Scenario

A-Typical Investments (ATYP) is an asset management firm that specializes in alternative investments including hedge funds, private equity and real estate Sean Lee is the CEO of ATYP. Lee has assigned Tom Roy, an assistant portfolio manager, the task of valuing three commercial real estate properties that ATYP has shortlisted for acquisition. Exhibit 1 displays key information about the three properties.

Exhibit 1
Selected Property Data

	Property 1	Property 2	Property 3
Gross potential rent	$2,500,000	$2,000,000	$3,000,000
Expense Reimbursement revenue	$400,000	$250,000	$0
Other income	$200,000	$20,000	$350,000
Vacancy loss	$415,000	$189,000	$234,000
Operating expenses	$80,000	$455,000	$1,110,000

*For each of the properties, property management expenses are 10% of effective gross income.

To gain further insight into the valuation metrics of the properties, Roy approached Jessica Stone, a research analyst at ATYP, to provide him with details about the income-producing potential of each of the above properties. Stone presented the following information:

- The net operating income of Property 2 is expected to remain constant for the next two years, at the end of which, it is expected to see a one-time jump of 15%. After that, no further growth is expected.
- If ATYP invests in Property 2, it should hold it for two years. The terminal cap rate for the property is 13% and the discount rate is 10%.
- Property 1 is currently being renovated due to which it has a higher than typical vacancy rate. If we purchase the property, ATYP would have to complete the renovations. However, if it were already renovated, it would have an NOI of $5 million next year, which is expected to increase by 4.5% per year thereafter. Even though next year's NOI is lower, from year 2 onwards, the NOI will revert to its stabilized value. The IRR for such an investment, after renovation, is 16%.

After reviewing Roy's work, Lee is considering the purchase of Property 3. The property has an appraised value of $16 million. Roy wants to maximize ATYP's return on equity, and is hence, evaluating various financing alternatives with regards to the investment in the property. Lee instructed Roy to get rates that lenders in the market are willing to accept to grant loans for commercial real estate. Roy presented Lee with the following quote:

"An interest-only loan at 9.5% as long as the LTV ratio does not exceed 70%, and the DSCR is at least 1.35. The balance of the loan will be due after 7 years."

Roy decided to take the loan and invest in the property. Lee was not sure how the return on equity of this leveraged investment compared to an all-cash purchase. To get a complete understanding on various approaches to valuing real estate, Roy read an article on "Private Real Estate Investments", published in a financial journal. The article presented the following information of a commercial property:

"The property has a going-in capitalization rate of 6.5% and a terminal capitalization rate of 5.0%. Investors require a total return of 9.5% from the investment. Mortgage rates in the market to finance the purchase of the property are 6.0%. Market rents and property values are expected to increase at a rate of 3.0% for the foreseeable future, and equity investors are willing to accept a 5.0% additional return to take on the risk of the investment."

After reading the article, Roy approached Lee and made the following comments:

Statement 1: "The cap rates on properties are useful indicators about their income growth potential. These rates are somewhat analogous to the P/E multiple for a stock—stocks with greater earnings potential have higher multiples, just like properties with greater income potential have lower cap rates."

Statement 2: "The cap rate that investors are willing to accept is based on the current NOI and does not depend on how income might change in the future. The discount rate, on the other hand, is based on current and future NOI, and hence, takes into account how future NOI might change."

37. Based on the information provided in Exhibit 1 and the information provided by Stone, the value of Property 2 using the discounted cash flow method, is *closest* to:

    A. \$12,826,902.
    B. \$12,949,820.
    C. \$41,521,424.

    Correct Answer: A

    Reference:
    Level II of CFA Program Volume 6, Study Session 15, Reading 42, LOS g

    NOI: \$1,417,900=2,000,000+250,000+20,000 – 189,000 – (10%×2,081,000) – 455,000

    Property value at end of 2 years: 1,417,900(1.15)/0.13 = \$12,542,961.54

    Value:
    N=2 FV=\$12,542,961.54 PMT=1,417,900 I = 10%
    CPT PV

    The current value of the property is: \$12,826,902

38. The price that ATYP should be willing to pay for property 1 is *closest* to:

    A. \$39,495,483.
    B. \$41,182,140.
    C. \$43,428,439.

    Correct Answer: B

    Reference:
    Level II of CFA Program Volume 6, Study Session 15, Reading 42, LOS g

    First year's NOI: 2,500,000+400,000+200,000 –415,000 –(10%×2,685,000) – 80,000 = \$2,336,500

    Value: [2,336,500+5,000,000(1.045)/(0.16-0.045)]/1.16
    =[2,336,500+45,434,782.61]/1.16
    = \$41,182,140.18

39. The equity dividend rate for property 3, assuming the property is purchased at its appraised value, is *closest* to:

    A. 13.13%.
    B. 15.75%.
    C. 16.32%.

    Correct Answer: A

    Reference:
    Level II of CFA Program Volume 6, Study Session 15, Reading 42, LOS m

    NOI: \$1,694,400 = 3,000,000+350,000+0 – 234,000 – (10%×3.116,000) –1,110,000

    Mortgage payment: Based on LTV: 70% of 16 million: \$11,200,000

    Based on DSCR, mortgage payment: 1,694,400/1.35 = \$1,255,111.11 and loan amount:1,255,111.11/0.095 = \$13,211,696

    The lower loan amount is what can be borrowed.→ \$11,200,000 since it is < \$13,211,696.

    The first year cash flow is the NOI less the mortgage payment: \$1,694,400 – (\$11,200,000×9.5%) = \$630,400

    Equity: 16,000,000 – 11,200,000 = \$4,800,000

    The equity dividend rate is: 630,400/4,800,000 = 13.13%

40. If property 3 can be sold after 5 years for \$18 million, financial leverage is *most likely* to:

    A. positively affect the investor.
    B. negatively affect the investor.
    C. have no affect on the return to an investor.

    Correct Answer: A

    Reference:
    Level II of CFA Program Volume 6, Study Session 15, Reading 42, LOS m

If no loan was taken, the IRR would be:
PV = –16 million
PMT = NOI = 1,694,400
N= 5
FV = 18 million
IRR: 12.536754%

The investor earns 12.536754% before adding the loan, and the loan is at 9.5%, so the investor will benefit from the spread.

41. With regards to the article, and considering each in isolation, which of the following statements is *most* accurate?

    A. The risk premium for the property is not fully reflected in the discount rate used.
    B. The implied growth rate is greater than the actual growth in market rents and property values.
    C. The article most likely assumes that interest rates are going to rise in the future and property values will increase at a lower rate.

Correct Answer: A

Reference:
Level II of CFA Program Volume 6, Study Session 15, Reading 42, LOS f

The implied growth rate is: Discount rate – going in cap rate = 9.5%-6.5% = 3.0%. Market rents and property values are also expected to increase by 3.0%. Since the terminal capitalization rate is less than the going-in rate, this suggests that either interest rates will fall or the property values and NOI will increase at an even faster rate in the future.

Option A is correct. The discount rate (9.5%) is 3.5% greater than the mortgage rate. However, equity investors require a 5% risk premium. Hence, the risk premium is not fully reflected in the discount rate used.

42. Roy is *most* accurate with respect to:

    A. Statement 1 only.
    B. Statement 2 only.
    C. both statements 1 and 2.

Correct Answer: A

Reference:
Level II of CFA Program Volume 6, Study Session 15, Reading 42, LOS f

Statement 1 is correct. The cap rate is analogous to the price-earnings multiple for a stock, except that it is the reciprocal. Just as stocks with greater earnings growth potential tend to have higher price-earnings multiples, properties with greater income growth potential have higher ratios of price to current NOI and thus lower cap rates.

Statement 2 is incorrect. Even though the cap rate is based on current NOI, the rate that investors are willing to accept depends on how they expect the income to change in the future and the risk of that income. These expectations are said to be *implicit* in the cap rate.

Questions 43 through 48 relate to Alternative Investments

Wing Financials (WING) Case Scenario

Wing Financials (WING) is an asset management firm operating several branches all over the U.S. Wing Alternatives (WIA) is one of the firm's independent subsidiaries that specializes in the pricing and valuation of alternative investments including private and publicly traded real estate, hedge funds, and private equity funds. Nicolas Gordon is a private equity analyst at WIA with considerable experience in evaluations of private equity funds. Recently, Gordon was invited to deliver a lecture on private equity valuation in The University of Financial Management (UFM), Illinois, USA. During the lecture, Gordon made the following comments contrasting valuation in venture capital and buyout settings:

Statement 1: "Since venture capital firms have the objective of generating high returns from a limited number of investments, they typically conduct a full blown due diligence of the target firm before investing in it. This includes strategic, commercial, financial, legal, environmental, and tax considerations. On the other hand, buyout firms are more likely to focus their analysis on the financial and legal aspects of the deal."

Statement 2: "Variable revenue to the general partner of buyout firms comprises of carried interest, transaction fees and monitoring fees. However, for the GP of VC firms, carried interest is generally the main source of variable revenue."

After his visit to UFM, Gordon met Randy Thom, a newly hired research analyst at WIA. Thom wanted to learn about various private equity fund structures, and asked Gordon to strengthen his conceptual understanding of PE funds' operations. To explain the workings of a PE fund, Gordon presented him with the following example:

"The private equity fund has a committed capital of $450 million. The fund made its first and only investment of $50 million a year ago and just exited the investment. The general partner of the fund received $5 million from the deal since he was entitled to a carried interest of 25%."

Thom then posed the following questions to Gordon:

Question 1: "From what I understand, there must be instances when there is a conflict of interest between GPs and their LPs. How can these conflicts of interest be prevented?"

Question 2: "I have heard that the performance of PE funds is affected by fees and profit shares. How can we measure their impact on fund performance?"

Gordon answered:

Answer 1: There are various private equity terms that can prevent such conflicts of interest. These include tag-along, drag-along rights, no-fault divorce and crossover co-investments.

Answer 2: Their impact can be measured by comparing the gross IRR measure with the net IRR measure of the private equity fund. In addition to this, comparing the NAV before distributions with the NAV after distributions can also reflect the impact that profit sharing has on fund performance."

Gordon is evaluating the performance of three venture capital funds. Exhibits 1-3 display selected information about the funds.

Exhibit 1

Fund	Vintage	Committed Capital ($ millions)	Capital Called Down (%)	Gross IRR (%)	Net IRR (%)	Report Date
A	2003	15	95%	18.34	12.45	Dec 2010
B	2008	35	35%	1.5	(0.56)	Dec 2010

*Term for Fund A is 2012 and for Fund B is 2018.

Exhibit 2

Fund	DPI	RVPI
A	1.35	1.43
B	0.12	1.55

Exhibit 3
Fund C Performance Information ($ millions) for the year 2010

Capital called down	**15**
Cumulative Paid in capital	125
Operating results	115
Management fees	2% of cumulative capital called-down
Beginning NAV after distributions	187.34
Carried interest	15.67
Distributions	100

*The total distributions till date equal $189 million.

43. Gordon is *most* accurate with respect to:

A. Statement 1 only.
B. Statement 2 only.
C. both statements 1 and 2.

Correct Answer: B

Reference:
Level II of CFA Program Volume 6, Study Session 15, Reading 44, LOS c

Statement 1 is incorrect. Buyout firms typically conduct full blown due diligence before investing in the target firm. Venture capital firms, on the other hand, tend to conduct primarily a technology and commercial due diligence; financial due diligence is limited as portfolio companies have no or very little operating history.

Statement 2 is correct. Variable revenue to the general partner (GP) at buyout firms comprises of carried interest, transaction fees, and monitoring fees. Variable revenue to the GP at VC firms is generally comprised of carried interest.

44. With respect to the example Gordon presented to Thom, which of the following distribution mechanisms does the fund *most likely* follow?

A. Deal-by-deal waterfalls
B. Total return waterfalls (threshold 20%)
C. Either deal-by-deal or total return waterfalls (threshold 20%)

Correct Answer: C

Reference:
Level II of CFA Program Volume 6, Study Session 15, Reading 44, LOS c

Under the deal-by-deal method, the GP receives carried interest after each individual deal. Since the GP received $5 million from the deal, the profit must be 25% (x) = 5---x = $20 million. Hence, the entire proceeds of the sale are $70 million. Under the first alternative of the total return method, the GP would receive nothing. Under the second alternative, the exit value of $70 million exceeds 20% of the invested value of $50 million. The GP is thus entitled to receiving $5 million. Hence, the fund may be following either of the two distribution waterfall methods.

45. Gordon is *most* accurate with respect to:

A. Answer 1.
B. both Answers 1 and 2.
C. neither Answer 1 nor Answer 2.

Correct Answer: C

Reference:
Level II of CFA Program Volume 6, Study Session 15, Reading 44, LOS f, h and i

Answer 1 is incorrect. Although the no-fault divorce clause protects LPs since it allows them to remove a GP without cause as long as 75% of them approve the removal, a crossover co-investment is a classic example of a conflict of interest. A tag-along, drag-along right protects the management from any potential future *acquirer*.

Answer 2 is incorrect. Although the comparison of gross IRR with net IRR does reflect the impact of fees and profit sharing, the comparison of NAV before and after distributions indicates the impact of carried interest and distributions on the ending value of a fund.

46. Using the information presented in Exhibits 1 and 2, which of the following about Funds A and B is *most* accurate?

    A. Fund B's GP has not yet been able to increase the value of the investment portfolio as is evident from the gross and net IRRs of the fund
    B. An RVPI of 1.43 for Fund A indicates that it is a profitable fund very close to termination
    C. The GP of Fund A has a greater ability to raise funds in the market than does the GP of Fund B

Correct Answer: B

Reference:
Level II of CFA Program Volume 6, Study Session 15, Reading 44, LOS i

An RVPI of 1.43 indicates that the residual value remains high at 1.43 times capital drawn down which is a good signal about the profitability of the fund (it is close to termination since the fund terminates in 2 years).

Fund B is still a young fund and is most likely still experiencing the J-curve effect, as is evident from the gross and net IRRs. However, the residual value of 1.55 indicates that despite the fund being in its early years, the GP has managed to increase the value of the investment portfolio.

47. The ending NAV for the year 2010 of Fund C is *closest* to:

    A. $199.17.
    B. $299.17.
    C. $314.84.

Correct Answer: A

Reference:
Level II of CFA Program Volume 6, Study Session 15, Reading 44, LOS i

NAV before distributions: 187.34+15-2.5+115 = $314.84
NAV after distributions: $314.84-15.67-100=$199.17

48. The DPI and RVPI for Fund C are *closest* to:

    A. 0.800 and 2.518 respectively.
    B. 1.512 and 1.593 respectively.
    C. 2.312 and 2.393 respectively.

Correct Answer: B

Reference:
Level II of CFA Program Volume 6, Study Session 15, Reading 44, LOS i

DPI: 189/125 = 1.512
RVPI: 199.17/125 = 1.5934

Questions 49 through 54 relate to Fixed Income

Westgate Associates Case Scenario

Westgate Associates is a global wealth management firm managing Thelta, a fixed income fund. Leon Davis is fund manager of Thelta.

Davis is seeking to expand Thelta investments. However, any selected security must pass through the following screens prior to its inclusion:

1. The minimum credit rating must be investment grade.
2. Investment universe should comprise solely of local issuers.
3. Quoted interest rate should be a minimum of 5%.
4. Investment horizons of fund investors are long-term and must be considered.

Next, Davis collects data on recent yield changes at particular maturity points on the yield curve and key rate durations of Thelta (Exhibit 1). He intends to use this data to analyze the yield curve for changes in:

i. curvature,
ii. level, and
iii. steepness.

Exhibit 1:

Maturity	2	4	6	8	10	12
Δ Yield	+ 220 bps	+ 195 bps	+ 8 bps	+ 85 bps	+ 110 bps	+ 95 bps
Key rate duration	3.6	6.5	7.9	8.2	12.4	13.8

Davis would like to ensure that the yields of the chosen securities have a minimum impact on portfolio volatility. For this purpose, Davis is attempting to analyze the volatility of interest rates using the:

I. volatility term structure and
II. Cox-Ingersoll-Ross model.

In addition, Davis seeks to include zero-coupon default-free securities in the fund's investment portfolio. The securities being analyzed and the expected one-period and total holding period returns are summarized in the exhibit below (Exhibit 2).

Exhibit 2: One-period and Holding Period Returns For Zero-Coupon Securities

Security	Maturity (Years)	One-Period Return	Total Holding Period Return
A	1	3.5%	3.5%
B	2	3.5%	4.0%
C	7	3.5%	6.2%
D	12	3.5%	8.3%
E	15	3.5%	10.1%

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49. By passing new investments through the defined screens, Davis' security selection will be *most likely* consistent with the:

    A. preferred habitat theory.
    B. liquidity preference theory.
    C. segmented markets theory.

    Correct Answer: C

    Reference:
    Level II of CFA Program Volume 5, Study Session 12, Reading 34, LOS j

    Davis' security selection for Thelta will be consistent with the segmented markets theory. With clients' time horizons being long-term, the fund will be restricted to securities with a long-time horizon.

    A is incorrect. The preferred habitat theory states that will investors have strong preferences for particular maturity ranges. Higher returns in other maturity ranges may encourage shifting portfolio assets outside their preferred range. The time horizon of investors restricts the fund's investments to long-term securities.

    B is incorrect. The liquidity preference theory claims that in order to lend long-term investors need to be offered a premium to compensate for the higher liquidity risk. There is nothing in the case which may suggest that the investment process will result in decisions being made in accordance with this theory.

50. Based on the data in Exhibit 1, Davis will conclude that the yield curve has undergone a change in:

    A. level only.
    B. steepness only.
    C. level and curvature.

Correct Answer: C

Reference:
Level II of CFA Program Volume 5, Study Session 12, Reading 34, LOS l

The short-term and long-term rates have both increased indicating a change in level. However, the change in the intermediate rate is almost negligible relative the short- and long-term rates. The latter situation indicates a change in curvature.

51. Using the data in Exhibit 1, which of the following interest rate changes has the highest effect on the value of the portfolio?

    A. 2 year.
    B. 10 year.
    C. 12 year.

Correct Answer: B

Reference:
Level II of CFA Program Volume 5, Study Session 12, Reading 34, LOS l

$$Duration = \frac{\Delta \Pr ice}{\Delta Yield}$$

Δ in Price (Maturity, 2 years) = – 3.6 × 2.2% = – 7.92%
Δ in Price (Maturity, 10 years) = – 12.4 × 1.10% = – 13.64%
Δ in Price (Maturity, 12 years) = – 13.8 × 0.95% = – 13.11%

The security with the highest price sensitivity as measured by duration will maximize the impact of yield changes on portfolio returns.

52. Using term structure volatility, Davis will conclude that the volatility of short-term rates is:

    A. higher and linked to inflation.
    B. higher and linked to monetary policy.
    C. lower and linked to economic activity.

    Correct Answer: B

    Reference:
    Level II of CFA Program Volume 5, Study Session 12, Reading 34, LOS m

    The volatility term structure shows that the volatility of the short rates is higher relative to long-term rates and is linked to uncertainties in the monetary policy.

    A is incorrect. The volatility of long-term rates is more closely linked to uncertainties in inflation. The volatility of short-term rates is linked to uncertainties in monetary policy.

    C is incorrect. The volatility of long-term rates is lower and more closely linked to uncertainty in real economic activity.

53. Using the Cox-Ingersoll-Ross model, Davis will conclude that with the level of interest rates, volatility will:

    A. increase.
    B. decrease.
    C. remain unchanged.

    Correct Answer: A

    Reference:
    Level II of CFA Program Volume 5, Study Session 12, Reading 34, LOS k

    The Cox-Ingersoll-Ross model includes a volatility term which follows the random normal distribution and makes volatility proportional to the square root of the short-term rate and allows volatility to increase with the level of interest rates.

54. A shortcoming of the term structure theory used by Davis to arrive at the forecasts in Exhibit 2 is that:

    A. economic reality is not captured.
    B. investors are assumed to be risk neutral.
    C. the independence of yields at different maturities is not considered.

Correct Answer: A

Reference:
Level II of CFA Program Volume 5, Study Session 12, Reading 34, LOS j

Davis is using the local expectations theory to derive the forecasts in exhibit 2.

This is evident from the one-period holding return for each security, regardless of maturity, being equal to the one-period risk-free rate of 3.5% (the return of security A). Furthermore, total holding period returns are higher relative to the one-period return due to the inclusion of risk premiums (returns increasing with maturity). A shortcoming of this theory is that it fails to accurately represent economic reality; this is because it has been observed that short holding-period returns on long-term bonds typically exceed that for long-term bonds.

B is incorrect. The pure expectations theory assumes investors are risk-neutral while the local expectations theory acknowledges the existence of risk for longer holding periods.

C is incorrect. This statement reflects a limitation of the liquidity preference theory. The theory simply argues for the existence of a liquidity premium. For example, a downward sloping term structure can still be consistent with the existence of liquidity premiums as can an upward sloping yield curve.

Questions 55 through 60 relate to Portfolio Management

Dave Gilbert Case Scenario

Dave Gilbert is a portfolio manager and economic analyst at Western Alliance, a wealth management firm operating in Regine, a country with an emerging market. In an effort to diversify his clients' holdings, Gilbert has decided to allocate fixed-income securities to their portfolios. He decides to consider risky corporate bonds as potential asset classes and identifies four bond issues each with a different maturity (Exhibit 1). Prior to allocation, Gilbert decomposes the value of each issue into two components, the risk neutral present value and discount for risk. The latter represents the covariance between the intertemporal rate of substitution and the future price of the investment one year from today.

Exhibit:
Potential Bond Issues for Client Portfolios

Bond Issue	Risk Neutral Present Value*	Discount for Risk*
A	0.8943	0.045
B	0.9021	0.061
C	0.7654	- 0.034
D	0.8993	0.000

*Per $1 of Par Value

After collecting the data in the exhibit, Gilbert aims to address the following questions:

Question 1: Which bond issue carries a positive risk premium?

Question 2: Which bond issue can be classified as a one-period default-free bond?

Question 3: Which bond issue will be least suitable for those investors who expect their labor income to shrink in the future due to poor economic conditions?

After making the allocations, Gilbert proceeds to explore the relationship between the real GDP growth and real default-free interest rate in Regine's economy. In the current year, Regine's stocks have been included in a global emerging market index following significant technological progress. In a few years, the country's economic growth is expected to converge with its steady state projected growth. The current real GDP growth rate exceeds that observed in developed markets such as U.S. and Japan.

Gilbert concludes his study by exploring the factors which help to explain the observed upward sloping nominal yield curve. He believes the slope may indicate a preference for one bond maturity over the other.

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55. The *most* appropriate response to Question 1 is bond issue:

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

    Correct Answer: C

    Reference:
    Level II of CFA Program Volume 6, Study Session 17, Reading 49, LOS a

    A negative covariance term will result in a positive risk premium. Based on the pricing formula (below) a negative covariance term will result in a lower current market price today. A lower price today will result in a higher required return over time according to the present value model (below).

    Pricing formula = $P_{t,s} = \dfrac{E_t\left[\widetilde{P}_{t+1,s-1}\right]}{1+l_{t+1}} + \operatorname{cov}\left[\widetilde{P}_{t+1,s-1}, \widetilde{m}_{t,1}\right]$

    Present value model = $P^i{}_t = \sum_{s=1}^{N} \dfrac{E_t\left[CF^i{}_{t+s}\right]}{1+l_{t,s}+\theta_{t,s}+p^i{}_{t,s}}$

56. The *most* appropriate response to Question 2 is bond issue:

    A. A.
    B. C.
    C. D.

    Correct Answer: C

    Reference:
    Level II of CFA Program Volume 6, Study Session 17, Reading 49, LOS a

For a one-period default-free bond, the covariance term (or discount for risk) is zero because the future price is a known constant and the covariance of a random quantity with a constant is zero. Given that issue D is the only security with a zero risk discount factor it is classified as a one-period default-free bond.

57. The *most* appropriate response to Question 3 is bond issue:

    A. B.
    B. C.
    C. D.

Correct Answer: C

Reference:
Level II of CFA Program Volume 6, Study Session 17, Reading 49, LOS a

Bond issue D will be least suitable for investors who expect their income to shrink due to poor economic conditions. This is because a decline in income corresponds to a decline in consumption today which in turn increases the marginal utility of future consumption the intertemporal rate of substitution. In addition, poor economic conditions are associated with declining asset payouts for risky securities leading to declining asset prices. Investors will be exposed to declining asset prices and higher risk of bond defaults.

58. Based on the real GDP growth information presented with respect to Regine's economy, the analyst should expect:

    A. a negative relationship between real GDP growth and real default-free interest rates.
    B. real default-free interest rates to be higher in Regine relative to developed economies.
    C. real default-free interest rates to be lower in Regine relative to developed economies.

Correct Answer: B

Reference:
Level II of CFA Program Volume 6, Study Session 17, Reading 49, LOS c

B is correct. The higher rate of real GDP growth in Regine relative to developed world economies suggests that emerging market economy should be characterized with higher real default-free interest rates. The higher rate of economic growth will occur because Regine is below its steady state of growth and so it will grow faster to catch up (as has been anticipated).

A is incorrect. Real GDP growth rates are positively related to real default-free interest rates. An increase in the real GDP growth will lead to an increase in real default-free interest rate. An increase in real GDP growth rate will increase expected future income which, in turn, will increase the availability of goods and services in the future relative to today. Consequently, individuals will have less incentive to save for future consumption and so a higher real rate of interest is needed to induce saving for future consumption.

59. Based on Gilbert's growth expectations, which of the following statements *most* accurately characterizes investors' behavior?

   A. Individuals are less motivated to save today.
   B. Marginal utility is expected to increase in the future.
   C. Investor income is expected to decline in the future.

Correct Answer: A

Reference:
Level II of CFA Program Volume 6, Study Session 17, Reading 49, LOS c

A is correct. Gibert expects Regine's real GDP to increase in the future. Real GDP growth is always positively related to real default-free interest rates. An increase in real GDP growth will reduce individuals need to save for future consumption because they will have more goods and services available to them in the future as a result of higher expected future income.

B is incorrect. Individuals are expected to be wealthy in the future. A rise in financial wealth will increase consumption in the future relative to today which in turn will reduce the marginal utility of future consumption.

C is incorrect. See above.

60. Based on the observed slope of the yield curve and combining expectations of interest rates and bond risk premiums, Gilbert will *most likely* conclude that:

    A. short-dated bonds are more reliable hedges relative to long-dated bonds.
    B. short-dated bonds carry lower risk premiums relative to long-dated bonds.
    C. interest rates are expected to rise if expectations concerning bond risk premiums and interest rates are both considered.

Correct Answer: A

Reference:
Level II of CFA Program Volume 6, Study Session 17, Reading 49, LOS d

A is correct. An upward sloping yield curve indicates that short-term bonds have lower yields and expected returns relative to long-dated bonds. One reason which may explain the difference in expected return is that the former are valued for their ability to pay more during bad economic times. In this respect, short-dated bonds can be seen as being less positively correlated with bad times than long-dated bonds. This leads to short-dated bonds serving as more reliable hedges.

B is incorrect. Given that short-dated bonds are seen as more reliable hedges against bad economic times and have a less positive (or more negative) correlation with bad times than long-dated bonds, bond risk premiums should be higher for the latter.

C is incorrect. When expectations concerning bond risk premiums and future interest rates are combined, an upward sloping yield curve does not necessarily embody an expectation of interest rate increases. The yield curve may imply a combination of expected rate increases and risk premiums, or expected rate cuts that are more than offset by the existence of positive risk premiums.

This preference will drive the expected returns down prices of these favorable instruments up.