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Level II of CFA Program

Mock Exam 1
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FinQuiz.com – 1st Mock Exam 2019 (PM Session)

Questions	Topic	Minutes
1-12	Ethical and Professional Standards	36
13-18	Quantitative Methods	18
19-24	Financial Reporting and Analysis	18
25-36	Equity Investments	36
37-48	Alternative Investments	36
49-54	Fixed Income	18
55-60	Portfolio Management	18
	Total	180

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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.

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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.

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.

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.

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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.

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.

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.

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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."

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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.

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.

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.

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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.

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.

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.

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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

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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.

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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.

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.

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.

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.

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).

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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.

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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.

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.

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.

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.

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.

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

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

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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

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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.

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

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

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

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

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.

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

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

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

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

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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

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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.

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

    A. FinX
    B. Alpha
    C. Quarx

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

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

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.

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.

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.

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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.

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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,

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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."

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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.

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.

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%.

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.

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.

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

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

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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%."

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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

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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.

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%)

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

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

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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

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

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

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.

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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.

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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%

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.

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.

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.

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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.

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.

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.

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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.

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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.

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

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

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

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

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.

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.

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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.

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