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<tr>
<td></td>
<td><strong>Total</strong></td>
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Questions 1 through 6 relate to Ethical and Professional Standards.

Kathy Mooney Case Scenario

Kathy Mooney works for Ace Investment Management (AIM) as a portfolio manager and investment advisor. Mooney is one of the most senior portfolio managers at the firm and has worked through AIM’s early development phases. After ten years since establishment, AIM has now managed to earn a sound standing amongst its competitors, and has attracted a diverse set of private wealth and institutional clients. Due to Mooney’s seniority and initial assistance in founding the firm, AIM pays her a competitive base salary along with lucrative fringe benefits. In addition, Mooney receives additional monetary compensation when she is successful in the sales process and generation of assets under management for AIM. Hence, during client meetings, Mooney often mentions the services her firm offers, how they are unique, what new product offerings AIM has launched and how they might be an attractive inclusion to their portfolios. The assets generated through such marketing are invested in proprietary offerings such as affiliate mutual funds and in-house investment vehicles. Mooney does not disclose this compensation agreement to clients and prospects.

Mooney earned the right to use the Chartered Financial Analyst designation three years back and now participates in the CFA Examination Grading Program. Prior to participation in the program, Mooney signed the Grader Agreement where she agreed not to reveal or discuss examination materials with anyone except CFA Institute staff and other graders. One month back, Mooney completed the CFA examination grading for Level III candidates. Recently, during a conversation with some Level III candidates at AIM who had appeared for the exam, Mooney mentioned the questions she graded and how students performed on the questions on average.

Due to her participation in the CFA Institute Grading Program, Mooney has made contacts with a number of professional figures in the investment community. John Reitz, a portfolio manager and a CFA charterholder, is one such figure that Mooney has managed to be friends with. Reitz works for an investment firm with branches nationwide, and is also a member of the CFA Institute Investment Performance Council (IPC). The IPC is responsible for the creation and revision of the CFA Institute performance presentation standards. Since Reitz has advanced knowledge of any changes or revisions to be made in the standards, he uses this information to assist his firm in keeping up with the changes to the standards. This ensures that his firm is in complete compliance with the changes and is following best practice with regards to performance presentation. Mooney believes that this is essential to provide fair and accurate information to clients and prospects.

Mooney has been assigned the task of preparing marketing material for Ace Investment Management to be distributed to prospective clients. In preparing the material, Mooney plans to include the following information:
1. Ace Investment Management includes five employees that are charter holders. Two employees are expected to complete the Level 2 examination by early 2010.

2. Ace Investment Management also recruits portfolio managers from around the globe to bring diversity to their employee base. Two of them are John Doe and Kelly Dustin, both of whom have CFA-equivalent program degrees.

3. AIM encourages its employees to enroll in the CFA Program to obtain the highest set of credentials in the global investment management industry.”

After work, Mooney decided to visit her friends, Randy Singer and Tony Deale. Singer is a successful portfolio manager and a CFA charter holder. However, after twenty years of working in the investment industry, Singer finally decided to retire. Since he is no longer working for any firm, nor is engaged in the investment industry, he does not file a Professional Conduct Statement with the CFA Institute. When his friends ask him for his contact number, Singer hands out a plain business card with his new contact details where he uses ‘CFA’ after his name.

Deale is a young portfolio manager who recently joined an investment management firm as a financial analyst. Deale has earned both his CFA designation and a PhD in finance and investment. Deale completed the PhD after earning the CFA charter. When designing his business card, Deale cited the CFA designation after listing her PhD.

Mooney has just been hired as a consultant by Jenna Levine, a chemical engineer with fifteen years experience with Oxy-Chemicals (OXC), a leading firm in the chemicals industry. After her tenure at OXC, Levine joined an investment firm as a research analyst covering the chemicals industry. During her time at the firm, Levine invested her own portfolio in a number of firms in the chemicals industry and made significant money based on her research. However, most of her portfolio still constitutes her ownership in OXC, which she earned through an ESOP at the firm. Just recently, Levine was hired by Hydro-Chemicals (HYC) to devise a strategy that would increase the firm’s operating efficiency. As part of the strategy, Levine instructed HYC to share resources and profits with OXC. Her detailed analysis indicated that working with OXC would reduce costs, eliminate excessive wastage and increase profits. The board of HYC is, however, skeptical of the plan’s appropriateness, given Levine’s personal portfolio composition.

1. With respect to her compensation agreement, is Mooney most likely following best practice as dictated by the Code of ethics and the Standards of Professional Conduct?

A. No.
B. Yes, because sales efforts attempting to attract new investment management clients need not disclose this fact.
C. Yes, because the Standards do not prohibit Mooney from generating new business for her employer since it is obvious to clients and prospects that she is referring to the services of AIM.
2. With respect to her discussion with Level III candidates, has Mooney *most likely* violated Standard 7 (A) ‘Conduct as Members and Candidates in the CFA Program’ of the CFA Institute Standards of Professional Conduct?

   A. Yes.
   B. No, because she discussed the questions with students who had already appeared for the exam.
   C. No, because she not only discussed the questions with CFA candidates who had already appeared for the exam and knew the questions, she disclosed the information well after the exam was over.

3. Is Reitz *most likely* in violation with the CFA Institute Standards of Professional Conduct?

   A. Yes.
   B. No, because he is assisting his firm in following best practice with respect to CFA Institute performance presentation standards.
   C. No, because he is using his volunteer position to benefit the investment community in general.

4. With respect to the marketing material that Mooney designed, which of the above points is *most likely* in violation of the CFA Institute Standards of Professional Conduct?

   A. Points 2 and 3 only.
   B. Points 1 and 2 only.
   C. Points 1, 2 and 3.

5. Are Singer and Deale *most likely* in violation of the CFA Institute Standards of Professional Conduct?

   A. Only Deale is in violation.
   B. Only Singer is in violation.
   C. Both Singer and Dealer are in violation.

6. To avoid the conflict of interest arising due to her personal portfolio composition, Levine should *least likely*:

   A. sell her investments in chemical-related stocks.
   B. invest in mutual funds specializing in the chemicals industry.
   C. establish a blind trust with an investment policy specifying that her account hold a certain percentage of firms in the chemicals industry.
Questions 7 through 12 relate to Ethical and Professional Standards.

**Capital Market Advisors (CMA) Case Scenario**

Capital Market Advisors (CMA) is an asset management firm established in Houston, Texas. The firm has been providing investment management services for more than ten years now, and has managed to earn a reputable standing in the investment community. Portfolio managers at the firm are not only considered to be technically proficient, they are also known to follow the highest standards of ethical and professional conduct. For these reasons, CMA also provides investment firms wanting to adopt adequate compliance procedures regarding professional conduct, with consultants and qualified compliance officers. Eric Green, a portfolio manager at CMA, was hired as a consultant by Dominick Tavella, the CEO of Growth Equity Management (GEM). During a conversation with Green, Tavella mentioned that their firm had recently adopted and implemented the Asset Manager Code of Professional Conduct. To confirm the accurate implementation of the Code, Green gathered the following information:

1. Many portfolio managers at GEM maintain multiple business relationships with their clients, and such relationships are adequately disclosed.
2. Instead of establishing an independent compliance department, GEM has designated one of its employees as a compliance officer, who has complete authority with regards to the implementation of the Code.
3. GEM creates a restricted list of securities. Employees need to seek approval prior to trading in these securities. However, employees at GEM are not required to provide their compliance officer with copies of trade confirmations each quarter.

In addition to the above information, Green also reviewed the firm’s methods of determining end-of-period valuations and returns for portfolio assets. Green evaluated the valuation procedures for their private wealth funds managed as separate accounts, as well for the pooled institutional funds. He found out that GEM hires competent and qualified managers for the management of their private wealth funds, who perform thorough analysis and due diligence before making recommendations. In addition, the managers use widely accepted valuation methods to appraise portfolio holdings and apply them on a consistent basis. GEM’s pooled accounts are supervised by a board of directors consisting of the firm’s most senior and experienced portfolio managers. The board is responsible for approving the asset valuation policies and procedures and reviewing valuations.

As a part of his comprehensive analysis of the firm, Green held a meeting with Tavella to discuss the firm’s disclosure policies. One of the disclosures related to costs made to existing clients stated:

“A base fee equal to 2% of assets under management is charged annually. In addition, investors will also have to pay an incentive fee of 25% on all profits, realized and unrealized, above the threshold return. The threshold return will be determined at the start
of the client relationship, in the investment policy statement. In addition, the incentive fee will be recouped by investors if subsequent to the payment, the portfolio incurs losses.”

In addition, GEM also disclosed to each client the actual fees and other costs charged to them, but did not disclose the itemizations of such charges.

As their discussion continued, Green found out that as part of their risk management process, GEM hires an independent third-party to verify portfolio information provided to clients. The confirmation of portfolio information is done for their pooled vehicles, and takes the form of an audit performed by the third party verifier. Since such an audit is carried out to help portfolio managers at GEM identify potential problems, and not for their clients, GEM does not disclose to its clients the results of the audit. However, it does regularly inform them about the dates of the review process, and how such a process helps the managers at the firm identify problems as early as possible. GEM believes this will enhance their credibility.

Tavella then made the following comments:

Statement 1:  “GEM ensures that no client bears a financial loss by the misallocation of transactions by any GEM’s employee. To ensure this, GEM credits short-term interest to all accounts for which shares were incorrectly allocated, and removes short-term interest from those accounts that should have received shares and in which shares are put on a back-dated basis.”

Statement 2:  “Before allocating trades, GEM determines clients’ investment objectives. Those with similar investment objectives receive similar allocations when new purchases are made, no matter what the size of the portfolio.”

7. Are the procedures at Growth Equity Management in accordance with the Asset Manager Code of Professional Conduct?

   A. Yes.
   B. Only procedure 1 is in accordance with the Code.
   C. None of the procedures are in accordance with the Code.

8. With respect to the asset valuation procedures, is Growth Equity Management in accordance with the Asset Manager Code of Professional Conduct?

   A. No.
   B. Only with respect to the private wealth accounts.
   C. Only with respect to the pooled accounts.
9. Is GEM’s disclosure related to costs \textit{most likely} in accordance with the Asset Manager Code of Professional Conduct?

A. Yes.
B. No, because it does not disclose the itemizations of fees and costs.
C. No, because it did not disclose the average or expected expenses or fees clients are likely to incur.

10. Is GEM’s policy regarding the audit of their pooled accounts \textit{most likely} in accordance with the Asset Manager Code of Professional Conduct?

A. Yes.
B. No, because GEM will need to seek approval of the particular clients whose funds are submitted for the audit, prior to the start of such a process.
C. No, because GEM’s disclosure policy regarding the audit is inadequate.

11. Which of Tavella’s statements is \textit{most likely} in accordance with CFA Institute Code of Ethics and Standards of Professional Conduct?

A. Statement 1 only.
B. Statement 2 only.
C. Neither Statement 1 nor statement 2.

12. Which of the following is \textit{most likely} a requirement to be in compliance with Standard I(A) ‘Knowledge of Law’ of the CFA Institute Standards of Professional Conduct?

A. A member of candidate should have knowledge of and be aware of all the facts giving rise to violations of applicable laws, rules or the Code and Standards.
B. A member or candidate has to leave his or her employer if all intermediate steps of reporting and disassociating from an unethical activity fail to work.
C. When dissociating from a violation, a member of candidate should document the violation and urge his or her firm to bring a stop to the activity.
Questions 13 through 18 relate to Global Investment Performance Standards.

Patrick Campbell Case Scenario

Patrick Campbell has just been hired as a consultant by Walter Investment Firm (WIF), an asset management firm in operation for seven years. In order to gain a competitive advantage in its industry, in March 2010, the firm came into compliance with the Global Investment Performance Standards (GIPS). WIF believes that being GIPS compliant will increase their clients’ confidence in their investment performance results and will provide them with an increased ability to compete in foreign markets. The CEO at WIF, Christopher Carter, hired Campbell to analyze their investment reporting and calculation methodologies, and to identify any errors that would prevent their compliance with the GIPS. As part of his evaluation process, Campbell talked to Carter to gather some information. Carter shared the following information:

- WIF values portfolios on the date of all large external cash flows, and uses an internally determined criterion to define ‘large’. Although this criterion requires judgment and hence, is not documented, it is applied consistently from one period to the next. WIF values composites every year using calendar year-end valuation dates. The composite returns are calculated by asset-weighting the individual portfolio returns.
- The Growth Equity Composite includes two portfolios that have an objective of earning a 2% excess return relative to a growth equity index fund including domestic U.S. stocks. Both portfolios are managed using a semi-active management approach. Exhibits 1 and 2 display information about the two portfolios.

<table>
<thead>
<tr>
<th>Date</th>
<th>Market Value ($)</th>
<th>Cash Flow ($)</th>
<th>Market Value After Cash Flow ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>05/31/09</td>
<td>495,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>06/13/09</td>
<td>550,000</td>
<td>135,000</td>
<td></td>
</tr>
<tr>
<td>06/22/09</td>
<td>715,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>06/30/09</td>
<td>867,000</td>
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</tr>
</tbody>
</table>
**Exhibit 2**

**Portfolio B**

<table>
<thead>
<tr>
<th>Date</th>
<th>Market Value ($)</th>
<th>Cash Flow ($)</th>
<th>Market Value After Cash Flow ($)</th>
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<tr>
<td>05/31/09</td>
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<tr>
<td>06/13/09</td>
<td>789,304</td>
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<tr>
<td>06/22/09</td>
<td>883,000</td>
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</tr>
<tr>
<td>06/30/09</td>
<td>1,450,394</td>
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</table>

- The firm’s Market Oriented Composite invests in stocks that have P/BV and P/E ratios equal to those of an average stock in the market. The composite includes a number of portfolios, including both fee-paying and non-fee paying discretionary portfolios. Some of the portfolios included in the composite are also part of other composites offered by the firm. WIF makes no disclosure related to the non-fee paying portfolios but they are subject to the same rules as fee-paying portfolios.

- WIF also offers real estate and private equity investment vehicles to its clients. WIF has invested a pension fund in direct real estate, and values this investment at market value at least quarterly. In addition, when a presentation about the investment’s returns is made to the board of the pension fund, WIF discloses the income and capital appreciation component returns in addition to the total return, for the portfolio investment, but not for the benchmark.

- WIF’s maintains a real estate closed-end fund composite which commenced on 30 December 2009 with its first legally binding and closed capital call of $2,500,000. An additional capital call was made on June 30, 2010 (Quarter 2) followed by two cash distributions to the composite’s investors. The investors will receive ownership of the portfolio’s assets at the end of the two years (31 December 2011). Exhibit 3 displays some transactions that took place in the portfolio during the two years.

**Exhibit 3**

**WIF’s Closed-End Fund Composite Transactions**

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Additional investment</th>
<th>Cash distribution</th>
<th>Cash distribution</th>
<th>Ending value</th>
</tr>
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<tbody>
<tr>
<td>2</td>
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<td></td>
<td></td>
<td>-$1,000,000</td>
</tr>
<tr>
<td>4</td>
<td></td>
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<td></td>
<td>$650,000</td>
</tr>
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<td>7</td>
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<td></td>
<td></td>
<td>$490,000</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>$4,200,000</td>
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</table>

In the real estate composite’s prospectus WIF has presented the composite’s since inception internal rate of return (SI-IRR) calculated in accordance with the GIPS provisions. The SI-IRR of the composite’s benchmark is quoted to investors on request. The vintage year of the fund has been identified as 2009 in the fund’s prospectus.
13. Are Walter Investment Firm’s calculation methodologies most likely in accordance with the Global Investment Performance Standards?

   A. Only with respect to composites.
   B. Both with respect to portfolios and composites.
   C. Neither with respect to portfolios nor with respect to composites.

14. The Growth Equity Composite return for the month of June based on the beginning assets plus weighted cash flows method using the modified Dietz method is closest to:

   A. 45.39%.
   B. 67.61%.
   C. 53.20%.

15. With respect to the Market Oriented Composite, is WIF most likely in accordance with GIPS?

   A. Yes.
   B. No, because GIPS do not permit firms to include a portfolio in more than one composite.
   C. No, because the treatment of non-fee paying portfolios is not GIPS compliant.

16. Is the treatment of the pension fund’s investment in direct real estate most likely GIPS compliant?

   A. Yes.
   B. No, because real estate investments must be valued at market value at least once every month.
   C. No, because the income and capital appreciation components must also be disclosed for the benchmark.

17. Using Exhibit 3, the SI-IRR for the WIF real estate composite over the measurement period, which is in accordance with the GIPS standards, is closest to:

   A. 6.4%.
   B. 13.4%.
   C. 28.1%.
18. Is WIF in compliance with the GIPS standards with respect to the details included in the fund’s prospectus?

   A. Yes.
   B. Only with respect to the vintage year.
   C. Only with respect to presenting the composite’s SI-IRR.
Questions 19 through 24 relate to Behavioral Biases of Individuals and Managing Institutional Investor Portfolios.

High-Rise Investment Management (HRIM) Case Scenario

Bill Coss is head of the trading division at High-Rise Investment Management (HRIM), a reputable Canadian asset management firm. Bill supervises more than twenty financial experts at his department. During his recent manager performance evaluation, Bill observes the following behavior of one of his managers named Philips Lomas.

“Philips examines historical charts of companies’ share prices to identify trends. Though he observes data from a larger time-series but often wrongly extrapolate recent performance of the stocks”.

Bill’s half-sister Christine Mills works in a commercial bank and is invited by High-Rise Investment Management to deliver a lecture on ‘Portfolio Management Process from the perspective of Banks’.

She defines bank as a financial intermediary that take deposits and make loans. Her presentation comprises of three parts.

Part 1: Investment Strategy and Risk Measures

The investment strategy of financial institutions should be made focusing on volatility and convexity of assets and liabilities, degree of leverage, amount of common equity capital, etc.

As banks are highly sensitive to changes in interest rates, therefore banks tend to reduce asset-liability mismatches. She explains in detail the relation among asset-liability mismatch, size of the bank and interest rate shock.

A junior analyst asks the following question, “If a bank’s liabilities duration is greater than the bank’s asset duration, how positive interest rate shock affect the market value of bank’s net worth?”

Part 2 Liquidity Requirements

Banks generally have lower liquidity needs due to their:

a) goal to exist in perpetuity
b) long-term nature of liabilities
c) predictable nature of cash outflows
Part 3: Tax Concerns and Legal & Regulatory Factors

- **Tax Concerns:**
  Banks evaluate performance of taxable and tax-exempt investments on an after-tax basis to maximize their after-tax returns.

- **Legal & Regulatory Factors:**
  Banks are subject to fewer regulations; however, it is prudent to consider state or federal regulation that might influence the investment portfolio of a bank.

At the end of the session Daniel, a portfolio manager at HRIM inquired about the primary return objective of a bank’s securities portfolio.

19. Philips’s portfolio would most likely indicate which behavioral bias?
   
   A. Framing bias  
   B. Availability bias  
   C. Representativeness

20. Consequences of Philips’ behavioral bias may include:
   
   A. Slow to react new information.  
   B. Avoid dealing with complex information.  
   C. Overweighting stocks of well-known companies.

21. With respect to Part 1 ‘Investment Strategy and Risk Measures’, the most suitable response of the junior analyst’s question is that as a result of positive interest shock, the bank’s net worth will:
   
   A. increase  
   B. decrease  
   C. remain unchanged.

22. With respect to Part 2 ‘Liquidity Requirements’, Christine is most likely:
   
   A. correct.  
   B. incorrect.  
   C. incorrect about c only.

23. With regards to Part 3 ‘Tax Concerns and Legal & Regulatory Factors, Christine is most likely:
   
   A. correct.  
   B. incorrect about ‘Tax concerns’ only.  
   C. incorrect about ‘Legal and regulatory factors only.’
24. Which of the following is *least likely* the return objective of a bank’s securities portfolio?

   A. To maintain substantial liquidity.
   B. To earn positive interest rate spread.
   C. To preserve the real value of its investment portfolio.
Questions 25 through 30 relate to Equity Investments.

Smithson Asset Management (SAM) Case Scenario

Smithson Asset Management (SAM) is an institutional portfolio management firm based in the U.S. SAM has traditionally been biased towards fixed income securities in its fund’s holdings. Senior asset manager, Raul Gonzales, is seeking to change this by revising the allocation to include equity securities. He instructs Charles Solanki, manager of Angular Fund’s investment portfolio, to follow through with the revised allocation.

Angular Fund (AF)
The AF is a defined benefit pension fund characterized by a below average risk tolerance due to a funding deficit, a low active to retired employees ratio, and deteriorating financial circumstances of the plan sponsor, Angular Limited.

Gonzales has instructed Solanki to allocate equities to clients’ portfolios. Based on AF’s risk tolerance, Solanki adopts a passive exposure to equity market and benchmarks the equity allocation to S&P 500 equity index.

Gonzales then asks Solanki about the various approaches to create index tracking equity portfolio. Solanki describes the following two approaches.

Approach 1:
One approach is full replication and I would like to share with you two important facts about this approach.

Fact 1: Full replication is easy to comprehend; however, index must have constituents that are readily available for trading.

Fact 2: To construct a portfolio using this approach, we need data such as the constituent stocks, their relevant identifiers, shares outstanding and price.

Approach 2:
Another way to track an index using only a subset of stocks is to divide the index along multiple dimensions, creating groups. Each stock is then placed into the group that best describes it. Finally, a manager can select a number of stocks from each group, ensuring that the selected stocks have a market capitalization equal to the total market capitalization of all the stocks in that group.

Gonzales then adds that I’m not in favor of full replication or blended approach so let’s select between sampling or optimization. Can you differentiate optimization approach from stratified sampling?
Solanki replies:

“If lowering the amount of portfolio’s tracking error is the prime objective, then optimization is preferable over stratified sampling. However, if we construct a portfolio using optimization approach, it is likely that our portfolio includes securities from different sectors whose returns are strongly correlated.”

Gonzales discusses with Solanki the sources of income as well as the various costs associated with equity portfolios. Gonzales is particularly interested about enhancing portfolio return through stock lending.

With regards to the advantages of Security lending, Solanki told Gonzales the following:

Advantage 1: Stock loans are collateralized with either cash or other high-quality securities therefore stock lending transaction provide complete financial protection to the lenders.

Advantage 2: Security lending program is hassle free as there is no administrative cost involved.

Advantage 3: Although dividends on loaned stocks are received by stock borrower, however, the stock borrower compensates the lender for the full dividend payment.

25. Which of the following reasons explain why Gonzales has been motivated to consider equities in the firm’s asset allocation? For:

   A. meeting social responsibility investing (SRI) concerns.
   B. reducing the impact of inflation on corporate taxation.
   C. preserving the purchasing power of the fund during periods of inflation.

26. With regards to Approach 1, Solanki is most likely:

   A. correct.
   B. incorrect about fact 1.
   C. incorrect about fact 2.

27. With regards to portfolio construction, Solanki’s Approach 2 is most likely:

   A. optimization.
   B. blended approach.
   C. stratified sampling.
28. Is Solanki correct with respect to the process of approach 2:

A. Yes.
B. No, he is incorrect about dividing the stocks along multiple dimensions.
C. No, he is incorrect about the fact that the selected stocks’ market capitalization is equal to the total market capitalization of all the stocks in that group.

29. With regards to Gonzales question about the difference between optimization and stratified sampling, Solanki’s reply is most likely:

A. correct.
B. incorrect because optimization approach takes into account covariances among portfolio constituents.
C. incorrect because stratified sampling is preferable over optimization, if lowering the amount of portfolio’s tracking error is the prime objective.

30. With regards to the advantages of security lending, Solanki is most likely correct about advantage:

A. 3 only.
B. 1 and 2 only.
C. 1 and 3 only.
Questions 31 through 36 relate to Fixed-Income.

Jimmy Pickens Case Scenario

Jimmy Pickens works at SkyLine Capital Specialists (SLCS), an investment firm in the U.S. established by a group of experienced financial analysts and investment professionals. Pickens is a senior portfolio manager at the firm who heads a team of more than ten fixed income analysts. During his lunch break, Pickens was called by David Pressman, a fixed income manager at SLCS. Pressman wanted help in analyzing the immunization of a single liability that was due in fifteen years. He had short-listed three bond portfolios composed of coupon-bearing government bonds for this purpose, with the objective of minimizing structural risk over the investment horizon. Exhibit 1 displays the risk and return characteristics of the three portfolios.

Exhibit 1: Immunization Portfolios Risk and Return (based on aggregation of bond cash flows)

<table>
<thead>
<tr>
<th>Portfolio</th>
<th>Cash flow yield stated on a semi-annual bond basis</th>
<th>Annualized convexity</th>
<th>Annualized Macaulay duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portfolio A</td>
<td>9.11</td>
<td>145.06</td>
<td>15.01</td>
</tr>
<tr>
<td>Portfolio B</td>
<td>8.97</td>
<td>122.10</td>
<td>15.02</td>
</tr>
<tr>
<td>Portfolio C</td>
<td>8.99</td>
<td>133.90</td>
<td>14.9</td>
</tr>
</tbody>
</table>

*All portfolios have the same market value

After Pickens assisted Pressman with his calculations, he talked about how single and multiple liabilities could be immunized to lock in a guaranteed rate of return over a particular time horizon. When talking about multiple liability immunization, Pickens made the following comment:

Statement 1: “To assure multiple liability immunization in the case of parallel rate shifts, managers selecting securities to be included in the portfolio must not only keep track of the matching of money duration between assets and liabilities but also maintain a specified distribution for assets in the portfolio.”

Pickens then talked about the various methods of immunizing multiple liabilities. He made the following comment:
Statement 2: “Perfect cash flow matching is less risky than horizon matching which in turn is less risky than multiple liability immunization. However, cash flow matching is the most costly to implement, whereas multiple liability immunization is the least.”

In addition to the liability due in fifteen years, Pressman was also held in charge of devising an effective strategy that would pay off the debt liabilities of Stone-Wash Corporation (SWC), one of SLCS’s institutional clients. The market value of the portfolio of multiple liabilities equaled 23.56 billion with a modified duration of 7.54, convexity of 69.13 and BPV of $12.36 million respectively. During a meeting with SWC’s board of directors, Pressman suggested three different portfolios to pay off the debt. The portfolios consisted of investment grade corporate bonds with maturities ranging from 5 to 12 years. The market value of all three portfolios was deemed sufficient to cover the liabilities. Exhibit 2 displays key characteristics of the three portfolios.

<table>
<thead>
<tr>
<th></th>
<th>Portfolio A</th>
<th>Portfolio B</th>
<th>Portfolio C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modified Duration</td>
<td>7.55</td>
<td>7.56</td>
<td>7.54</td>
</tr>
<tr>
<td>Convexity</td>
<td>65.10</td>
<td>74.20</td>
<td>69.14</td>
</tr>
<tr>
<td>BPV (in US $millions)</td>
<td>12.40</td>
<td>12.43</td>
<td>15.77</td>
</tr>
</tbody>
</table>

Pickens is currently managing a $75.18 million government bond portfolio to immunize corporate debt liabilities that have a market value of $76.45 million. The durations of the asset and liability portfolios equal 11.30 and 11.37, and their BPVs’ equal $55,320 and $59,890 respectively. To close the duration gap, Pickens has decided to use a futures contract with a BPV per 100,000 of notional principal of 10.04837 and a conversion factor of 0.7699.

Pickens is also managing a fixed income portfolio for Ryan Wicker, a chemical engineer working for Triple-E Chemicals (TEC) in USA. The portfolio is worth $3 million, and Wicker has instructed Pickens to use a long-term bond index as a benchmark for his portfolio. The index includes long-term corporate bonds, long-term government bonds, and long-term callable issues. To match the portfolio’s risk factors with those of the benchmark, Pickens is using a multifactor model technique to identify the set of factors that drive the index’s returns. Two of the risk factors that Pickens has identified are the spread duration and the sector duration. To ensure that the indexed portfolio closely tracks the benchmark with regards to these risk factors, Pickens matched the percentage weight in the various sectors and qualities of the benchmark index. Also, since Pickens knows that duration only captures the effect of small interest rate changes, he not only matched the duration, but also the convexity of the index, especially to replicate the index’s exposure to call risk.
Pressman is keen to understand the application of contingent immunization as an alternative to the more traditional duration matching approaches to managing a set of liabilities. He understands that duration matching is actually just hedging interest rate risk over the desired investment horizon. However, he is somewhat perplexed about the course of action a manager should take if interest rates are expected to fall and he/she is hedging using interest rate futures.

31. Which of the following portfolios should Pickens most likely recommend to Pressman for immunizing the liability due in 15 years?

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

32. Pickens is most accurate with respect to:

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

33. The most appropriate portfolio to carry out an effective duration matching strategy for paying off SWC’s liabilities would be:

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

34. With regards to his attempts to match the risk factors of Ryan Wicker’s bond portfolio to those of the benchmark, Pickens is most accurate with respect to the matching of the:

A. spread duration and sector duration only.
B. sector duration and call risk only.
C. neither the spread duration and sector duration, nor the call risk.

35. Which of the following is closest to the number of contracts that Pickens needs to transact in to close the duration gap of the government bond portfolio and the corporate debt liabilities?

A. Sell 275 contracts.
B. Buy 350 contracts.
C. Buy 455 contracts.
36. Given Pressman’s expectations about the future course of market interest rates, the best hedging strategy given contingent immunization would involve:

   A. Over-hedging the position.
   B. Under-hedging the position.
   C. Precisely hedging the position.
Questions 37 through 42 relate to Fixed-Income.

Rosewood Investment Case Scenario

Rosewood Investment Company is an asset management firm in Texas. Candice Price works as a portfolio manager at the firm and manages portfolios for many of the firm’s clients. Price recently implemented a strategy for a client by buying a call on a stock currently selling for $50. She simultaneously sold a call on the same stock with the same time to expiration as the long call. The long call has an exercise price of $55 with an option premium of $15. The short call has an exercise price of $65 with an option premium of $7. The options will expire in one month. During a meeting with the client, Price made the following comments:

Statement 1: “The position can lose 80% of its maximum profit because only 20% has been hedged.”

Statement 2: “Between the two option strike prices, the exercise value of the spread will rise steadily as the underlying price increases.”

One of Price’s clients has implemented a bear put spread. When asked about the outcomes of the strategy, Price mentioned that such a strategy would earn a maximum profit if both puts expire in the money. He also said that the breakeven price is such that leaves one put in the money and the other out of money.

37. Price is most accurate with respect to:

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

38. If at expiration of the calls the price of the underlying is $62, the profit to Price’s client will be closest to:

A. $7.
B. –$1.
C. $15.

39. For the position Price took, the maximum profit and maximum loss is closest to:

<table>
<thead>
<tr>
<th>Maximum Profit</th>
<th>Maximum Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. $2</td>
<td>$8</td>
</tr>
<tr>
<td>B. $8</td>
<td>–$2</td>
</tr>
<tr>
<td>C. $28</td>
<td>$22</td>
</tr>
</tbody>
</table>
40. For the position Price took, the breakeven stock price at expiration is closest to:

A. $47.
B. $77.
C. $63.

41. Is Price most likely accurate about the maximum profit and breakeven price of a bear put spread?

<table>
<thead>
<tr>
<th>Maximum Profit</th>
<th>Breakeven Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Yes</td>
<td>No.</td>
</tr>
<tr>
<td>B. No</td>
<td>Yes.</td>
</tr>
<tr>
<td>C. Yes</td>
<td>Yes.</td>
</tr>
</tbody>
</table>

42. Which of the following about option strategies is most accurate?

A. Bull spreads with American puts are riskier compared to those with European puts.
B. The worst outcome for a bear put spread occurs when the stock price is less than the exercise price of the short put.
C. The maximum a bull call spread can gain is the difference between the exercise prices of the short call and the long call.
Questions 43 through 50 relate to Alternative Investments.

Brian Riley Case Scenario

Brian Riley is a manager at BR Fund of Funds (FoF) based in Washington, D.C. The FoF is currently using Equity Market Neutral (EMN), Event Driven and Specialist strategies. EMN manager is in discussion with his assistant, who is a CFA level III student, regarding the characteristics of Equity Market Neutral strategy of managing hedge funds. The manager made the following statements:

Statement 1: EMN strategy involves generating alpha with no beta exposure, irrespective of market movements.

Statement 2: High liquidity makes EMN strategy suitable for liquid alternatives as well as limited partnership hedge funds.

Statement 3: Market neutral portfolios can be up to 300% long vs. 300% short

He classified himself as macro-oriented market neutral manager.

Event driven (ED) strategy manager is currently evaluating two investments. First is a merger arbitrage opportunity involving a friendly takeover of Texel Limited by Aspire Corporation Limited. Aspire has offered to acquire Texel with stock for stock acquisition method. Share prices are $50 and $20 for Aspire and Texel respectively. Aspire would trade 1 share of its own with 2 shares of Texel. Shortly after announcement, the share price of Aspire fell to $45 and Texel’s share price has risen to $23. The ED manager plans to buy 15000 shares to Texel and short sell 7500 shares of Aspire.

Second: the manager had invested in Scott Company’s equity which was going through reorganization 8 months ago and became a majority shareholder. He now expects that the company will shortly go into liquidation, based on its deteriorating financial situation. Shareholders will be entitled to a minimum amount, if any, in case of liquidation. The manager wants to earn return on this opportunity and considering possible alternatives.

The special strategy (SS) manager plans to invest in life settlement policy being sold by a broker after evaluation. Details of the policy are listed below:

<table>
<thead>
<tr>
<th>Exhibit 1: Life Settlement Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surrender value</td>
</tr>
<tr>
<td>Monthly premium</td>
</tr>
<tr>
<td>Remaining years of contract</td>
</tr>
<tr>
<td>Actuarial life expectancy</td>
</tr>
<tr>
<td>Required rate of return</td>
</tr>
<tr>
<td>Claim amount</td>
</tr>
</tbody>
</table>
The FoF is measuring its performance for the last quarter and the returns generated by EMN, ED and SS funds are 20%, (5%) and 15% respectively. FoF charges 1% management fee and 10% incentive fee while individual funds charge 1% management fee and 20% incentive fee.

43. Which of the following statements made by the EMN manager is most likely correct?

A. Statement 1  
B. Statement 2  
C. Statement 3

44. Which of the following statements about macro-oriented market neutral manager is most likely correct?

A. They consider fundamental and macro-economic factors for portfolio construction.  
B. Their source of alpha is through sector rotation.  
C. They adjust positions on a daily or even hourly basis using algorithm based models

45. Using the information provided about the acquisition, calculate how much incremental benefit the manager could have earned, if he had used soft catalyst event driven approach?

A. $84,600  
B. $79,800  
C. $82,500

46. Which of the following alternative approaches the ED manager is most likely to implement?

A. Selling the equity and buying senior secured debt  
B. Short sell the equity and buy senior secured debt  
C. Buy put options on equity and call options on senior secured debt

47. Based on exhibit 1, the present value of future expected benefit is approximately equal to?

A. $1.7 million  
B. $1.1 million  
C. $1.5 million
48. Which of the following statements about life settlement policy is least likely correct?

A. Life settlement policies require expert knowledge and skills  
B. Surrender value is paid to the beneficiary by the intermediaries  
C. The policy is a detailed special contract which is less standardized than other financial contracts

49. Given equal distribution of funds, the FoF’s net of fee return is approximately equal to?

A. 4.99%  
B. 5.22%  
C. 4.76%

50. Which of the following is most likely a benefit of investing in FoF?

A. It provides economies of scale and liquidity efficiencies  
B. Reallocation of funds to different strategies is a lot easier and quicker  
C. Netting risk is absorbed by the GP of the hedge fund
Questions 51 through 56 relate to Derivative Investments.

Victor Solanki Case Scenario

Victor Solanki is the manager of a fixed-income fund comprising domestic corporate and government-issued debt as well as US equities indexed to the S&P500. The fund is valued at a total of $30 million. The allocation to fixed income is 60% and is further divided as 60% domestic corporate bonds and 40% government-issued bonds.

Solanki would like to increase the corporate bond allocation by 10% using bond futures contracts and decrease the government bond allocation by the same amount using another set of futures contracts. The corporate bond allocation has a modified duration of 4.5. Solanki has summarized relevant data pertaining to bond futures in Exhibit 1 below.

Exhibit 1: Data Relevant to Bond Futures

<table>
<thead>
<tr>
<th>Futures contract beta</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiplier</td>
<td>$125</td>
</tr>
<tr>
<td>Contract size</td>
<td>$150,000</td>
</tr>
<tr>
<td>Cheapest-to-deliver (CTD) bond price</td>
<td>$118</td>
</tr>
<tr>
<td>CTD modified duration</td>
<td>7.77</td>
</tr>
<tr>
<td>Conversion factor</td>
<td>0.89751</td>
</tr>
<tr>
<td>BPV\text{CTD}</td>
<td>137.5290</td>
</tr>
</tbody>
</table>

Solanki fears that the implied volatility of the S&P 500 index will increase and would like to protect the firm’s equity position against tail risk. He is contemplating employing two alternative strategies:

Strategy 1: Establish a long position in front-month VIX futures currently priced at 127.45 and a short position in the second month VIX futures priced at 125.75 when the VIX currently stands at 125.99. The third month VIX futures is priced at 123.44.

Strategy 2: Establish a long position in a 3-month variance swap on the S&P 500 index with a vega notional of $10 million and a (unannualized) strike of 35%. The annual interest rate is 1.20%.

While explaining Strategy 1 to his subordinate Mary Graham, Solanki states, “This strategy can yield an additional return for my investment portfolio if the VIX futures curve remains in backwardation and volatility expectations remain unchanged as the front-month futures contract approaches expiration.”
Mary then illustrates the following various factors that cause continuous change in the shape of the VIX futures curve.

i) current volatility situation
ii) investors’ expectations about future level of volatility
iii) trading activity of VIX futures contracts by market participants

51. Increasing the corporate bond allocation will require Solanki to:

A. buy 3 bond futures contracts.
B. buy 4 bond futures contracts.
C. sell 35 bond futures contracts.

52. Based solely on the information provided in Strategy 1, the VIX futures curve appears to be in a state of:

A. stability.
B. contango.
C. backwardation.

53. Solanki is advised by one of his colleagues to consider a direct investment in the VIX to maximize hedging benefits. Is the colleague’s advice a plausible investment strategy?

A. No, one cannot directly invest in the VIX.
B. Yes, a direct investment is a less costly strategy.
C. No, an investment in the VIX is only profitable if the front-month futures price is higher than the second-month futures price.

54. Solanki’s statement to his colleague regarding the additional yield generated by the strategy is:

A. correct.
B. incorrect, the strategy will generate rolling costs.
C. incorrect, the strategy will generate negative roll returns.

55. Assuming the swap is executed, if the (unannualized) realized volatility at contract expiration is 40%, Solanki will:

A. make a payment of $53.57 million to the swap counterparty.
B. make a payment of $73.89 million to the swap counterparty.
C. receive a payment of $53.57 million from the swap counterparty.
56. Which of the Mary’s illustrated factors regarding always changing shape of the VIX futures is/are correct?

A. ii) is correct.
B. ii) and iii) are correct.
C. All three are correct.
Questions 57 through 60 relate to Portfolio Performance Evaluation.

Doug Richards Case Scenario

Gerard Asset Managers (GAM) is a medium sized firm which has been in the asset management business for only twelve months. The firm’s clients include both individual and institutional clients. The clients are roughly divided between the two types.

The firm has no formal performance evaluation process but would like to develop one in the near future. Its’ largest institutional client is particularly keen on analyzing the performances of the investment managers and asset categories it employs.

Apart from the institutional client, senior investment manager, Carl Lester, would like to install a formal system such that investment managers can analyze their individual performances independently. He believes such a system will allow the managers to improve upon their performances. However, he is not sure of what process the institutional client and investment managers can use for evaluating the performances of their interest.

Doug Richards, CFA is another investment manager who has been recently employed by GAM. He has proposed a method to Lester, which involves presenting benchmark and portfolio economic sector holdings as well as their respective benchmark and portfolio returns. Richards has provided a sample of this method below based on actual client data for illustration purposes.

<table>
<thead>
<tr>
<th>Economic Sectors</th>
<th>Portfolio Sector Weights (%)</th>
<th>Benchmark Sector Weights (%)</th>
<th>Portfolio Return (%)</th>
<th>Sector Benchmark Returns (%)</th>
<th>Sector Allocation Effect (%)</th>
<th>Sector Selection Effect (%)</th>
<th>Interaction Effect (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial</td>
<td>50.00</td>
<td>60.00</td>
<td>-4.55</td>
<td>-4.00</td>
<td>0.40</td>
<td>-0.33</td>
<td>0.06</td>
</tr>
<tr>
<td>Technology</td>
<td>45.00</td>
<td>30.00</td>
<td>2.23</td>
<td>3.76</td>
<td>0.56</td>
<td>-0.46</td>
<td>-0.23</td>
</tr>
<tr>
<td>Health Care</td>
<td>5.00</td>
<td>10.00</td>
<td>2.21</td>
<td>1.89</td>
<td>-0.09</td>
<td>0.03</td>
<td>-0.02</td>
</tr>
<tr>
<td>Total</td>
<td>100.00</td>
<td>100.00</td>
<td>-0.11</td>
<td>1.65</td>
<td>0.87</td>
<td>-0.76</td>
<td>-0.19</td>
</tr>
</tbody>
</table>

57. The performance evaluation method which is most appropriate for the institutional client and the investment managers is:

A. micro attribution analysis.
B. macro and micro attribution analysis, respectively.
C. micro and macro attribution analysis, respectively.
58. The interaction return for the Technology sector can be attributed to:

A. holding portfolio stocks, whose aggregate performance was lower than the aggregate performance of the stocks in the sector benchmark.
B. overweighting a sector in the portfolio, which has outperformed its corresponding benchmark sector.
C. overweighting a sector in the portfolio, which has underperformed its corresponding benchmark sector.

59. The Sector Allocation effect return for the Financial Sector can be attributed to:

A. underweighting a sector in the portfolio, which has underperformed its corresponding sector benchmark.
B. underweighting a sector, which has performed poorly relative to the overall benchmark.
C. holding portfolio stocks, whose aggregate performance was higher than the aggregate performance of the stocks in the sector benchmark.

60. The Sector Selection effect return for the Healthcare sector can be attributed to:

A. underweighting a sector which has performed poorly relative to the overall benchmark.
B. overweighting a sector which has performed better relative to the overall benchmark.
C. holding portfolio stocks, whose aggregate performance was higher than the aggregate performance of the stocks in the sector benchmark.