

FinQuiz.com

Level III of CFA Program

Mock Exam 1

June, 2019

Copyright © 2010-2019. FinQuiz.com. All rights reserved. Copying, reproduction or redistribution of this material is strictly prohibited. info@finquiz.com.

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

Questions	Topic	Minutes
1-6	Ethical and Professional Standards	18
7-12	Ethical and Professional Standards	18
13-18	Behavior Biases & Institutional Investor Portfolio	18
19-24	Performance Evaluation and Attribution	18
25-30	Risk Management Application of Derivatives	18
31-36	Equity Investments	18
37-42	Alternative Investments	18
43-48	Fixed-Income	18
49-54	Capital Market Expectations	18
55-60	Global Investment Performance Standards	18
	Total	180

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 a 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 *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 *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 *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 *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 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: Risk Measures

Leverage adjusted duration gap (LADG) measures bank’s overall sensitivity to changes in interest rates. She explains in detail the relation among LADG, size of the bank and interest rate shock.

A junior analyst asks the following question, “For a bank with negative LADG, 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.

13. Philips's portfolio would *most likely* indicate which behavioral bias?
- A. Framing bias
 - B. Availability bias
 - C. Representativeness
14. Consequences of Philips' behavioral bias may include:
- A. Slow to react new information.
 - B. Avoid dealing with complex information.
 - C. Overweight stocks of well-known companies.
15. With respect to Part 1 '*Risk Measures*', the most suitable response of the junior analyst's question is that as a result of positive interest shock, the market value of bank's net worth will:
- A. increase
 - B. decrease
 - C. remain unchanged.
16. With respect to Part 2 '*Liquidity Requirements*', Christine is *most likely*:
- A. correct.
 - B. incorrect.
 - C. incorrect about c only.
17. 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.
18. 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 19 through 24 relate to Performance Evaluation and Attribution.

Brian Hogan Case Scenario

Brian Hogan is an equity portfolio manager at GreenDeals Investment Management (GDIM), an asset management firm in USA. Every quarter, Hogan hires a financial consultant to perform a thorough analysis of the portfolio holdings of his clients' accounts. For the next four quarters, Hogan hired Joseph Riso, a financial analyst and an expert in performing portfolio evaluations and measuring returns. While talking about appropriate benchmark construction during an introductory meeting with Hogan, Riso made the following comments:

Statement 1: “At the investment manager level, a number of different types of benchmarks can satisfy the criteria for an acceptable benchmark. Of these types, the custom security benchmark is the one that meets all of the required benchmark properties and satisfies all of the benchmark validity criteria.”

Statement 2: “Broad market indexes as benchmarks are unambiguous. However, style indexes and factor model based benchmarks can be ambiguous and thus, are sometimes not appropriate to serve as benchmarks.”

After the meeting, Riso was assigned the task of analyzing the quality of the benchmark for an institutional fund worth \$10 million and a private wealth account worth \$7 million. The institutional fund constitutes mostly of large-cap value stocks, both domestic and international. During his analysis of the fund's benchmark, Riso gathered the following information:

1. When large-cap growth stocks outperformed the market as a whole, the fund produced a positive excess return relative to its benchmark.
2. When large-cap growth stocks underperformed the market as a whole, the fund outperformed the market but the benchmark underperformed the market.

Riso then proceeded towards evaluating the benchmark quality of the private wealth account, owned by Kellie James, a practicing physician in a community hospital. The account has a stated investment mandate that permits active management using long positions only. As part of his evaluation process, Riso gathered the following information:

1. The historical beta of the account relative to the benchmark equaled 1.02.
2. The tracking error of the account relative to the benchmark was 15% and the tracking error of the account relative to the market index was 17%.

3. Over the past month, the risk exposures of the benchmark were significantly greater than the risk exposures of the managed account.
4. The ratio of negative active positions to positive active positions was 1.5.

Hogan is also responsible for heading a portfolio management team for a large pension fund sponsored by Crest Enterprises (CE), a large firm operating in the industrial sector of the U.S. economy. The financial committee at CE instructed Hogan to perform a thorough evaluation of the performance of their pension assets for the month of June 2010. Hogan assigned this task to Riso and Andrew Ellerd, a financial analyst at GDIM with considerable experience in performance evaluation of institutional accounts. After a comprehensive assessment and performing rigorous calculations, Riso and Ellerd came up with numbers that helped them in determining the sources of the fund's returns. A portion of the results of their macro attribution analysis is provided in Exhibit 1.

Exhibit 1
Macro Attribution Analysis

Decision Making Levels	Returns
Aggregate manager investment style benchmarks	3.65%
Aggregate asset category benchmarks	3.76%
Aggregate actual return of the managers	3.81%
Allocation effects	0.00%

Ellerd is carrying out a micro attribution analysis of a portfolio owned by GDIM's oldest private wealth clients. Exhibit 2 displays some information Ellerd has put together to assist him with his evaluation.

Exhibit 2

Economic Sectors	Portfolio Weight (%)	Sector Benchmark Weight (%)	Portfolio Return	Sector Benchmark Return (%)
Energy	12.17	11.55	1.23	1.34
Capital goods	7.94	6.34	-0.67	-0.98
Technology	22.56	20.56	2.10	0.50

*The overall benchmark return equaled 1.20%

19. Riso is *most* accurate with respect to:
- A. Statement 1 only.
 - B. Statement 2 only.
 - C. both statements 1 and 2.
20. With respect to the information Riso gathered about the institutional fund, which of the following point(s) *most likely* indicates (indicate) that the benchmark is of poor quality?
- A. Point 1 only.
 - B. Point 2 only.
 - C. Both points 1 and 2.

Which respect to the information Riso gathered about the private wealth account, which of the following point(s) *most likely* indicates (indicate) that the benchmark is of poor quality?

- A. Point 4 only.
 - B. Points 3 and 4 only.
 - C. Points 1 and 3 only.
22. Which of the following is *least* accurate about the performance of Crest Enterprises's pension account during June 2010?
- A. Fund sponsors invested in all of the managers and asset categories precisely at the established policy allocations.
 - B. During June 2010, the return due to style bias was positive.
 - C. During June 2010, the managers' active management decisions had a positive impact on the change in the fund's value.
23. Using Exhibit 2, for which of the economic sectors was the pure sector allocation return the highest?
- A. Energy.
 - B. Capital Goods.
 - C. Technology.

24. Using Exhibit 2, for which of the economic sectors was the within-sector allocation return the highest?

- A. Energy.
- B. Capital Goods.
- C. Technology.

Questions 25 through 30 relate to Risk Management Application of Derivatives.**Kira Smith Case Scenario**

Kira Smith works at Derivative Strategists (DST), a firm that specializes in implementing portfolio management strategies involving futures, forwards, options and swaps. DST has worked with a number of investment management firms as a free-lance derivatives consultant, and has taken the opposite side of numerous transactions involving forwards, options, and swaps. Recently, Smith was hired as a consultant by Tiger Asset Management (TAM) to manage the risk of their \$350 million portfolio. The portfolio currently has a duration of 6.70, but due to an anticipation of rising interest rates in the future, TAM wants to reduce the interest rate sensitivity of their portfolio. Smith presented the investment committee at TAM with an option to invest in either of the following swaps to achieve their objective:

- A two year swap with semiannual payments.
- A one year swap with quarterly settlements.

After a thorough meeting with the investment committee and performing all the necessary calculations assuming the duration of a fixed rate bond equals 75% of its maturity, Smith decided to use the swap with the higher absolute duration to achieve the objective. The notional principal was set at \$270 million, just enough to meet the requirement.

Peter Ramos, the CEO at TAM, invited Smith over for lunch to discuss an institutional fund his firm had been managing. The fund is worth \$150 million and is owned by X-Tech Corporation, a firm producing high-tech equipment for computer manufacturing firms and the telecommunications industry. Last year, the firm expanded its operations to include the German market. However, given the wide fluctuations in the euro/dollar exchange rate, Ramos wants to hedge the currency risk of their euro inflows using a swap contract. During his lunch with Smith, Ramos expressed the objective of receiving a fixed amount of quarterly cash flows equal to \$3,758,483, from their German subsidiary, for the coming year. The fixed rates on plain vanilla interest rate swaps in Germany and United States are 6.7% and 7.5% respectively. The current spot exchange rate is €0.7685/\$.

X-Tech issued a ten-year callable bond with a face value of €55 million to support its expansion strategy. X-Tech has agreed to pay a coupon rate of 15% annually, of which 4.5% is the estimated credit premium. The finance department at the firm regularly monitors the interest rate environment to determine the risk of their debt portfolio. During a recent examination, X-Tech determined that interest rates were expected to fall in the euro zone. Knowing that such a scenario can prove to be unfavorable for their bond

position, the firm decided to remove the call feature from their bond issue. Ramos asked Smith how X-Tech can synthetically achieve this objective.

Ramos has invested \$10 million in a passive investment vehicle that tracks a comprehensive U.S. stock market index representing the large-cap segment of the market. Ramos wants to alter the beta of his portfolio and is deciding which method of doing so would be more appropriate. When he talked to Smith about it, Smith made the following comment:

Statement 1: “To change the beta of your portfolio, you can either transact in the individual securities that constitute your portfolio, or transact in the portfolio itself and the risk free asset. A third method is to use derivatives. Derivatives have the advantage of being low cost and more liquid. However, due to rounding issues, if you want to achieve the exact beta that you desire, the former two methods are more appropriate.”

Smith recently constructed a synthetic index fund consisting of a position of \$30 million by buying futures and investing money in risk free bonds. The fund will track a price index representing U.S. stocks and will be equivalent to investing in 35,204 units of the index. While talking to Ramos about it, Smith made the following comment:

Statement 2: “Although the synthetic replication strategy will result in exposure to the market, the transaction will not capture the dividends that would be earned if one held the underlying stocks directly.”

Apart from creating a synthetic index fund, Smith has also worked at synthetically converting an indexed position into cash. Smith did this for a pension fund that held an \$85 million indexed position tracking the S&P 500 index. Given that the index was expected to underperform, Smith was advised to convert the position to cash for a six month period. Smith used a futures contract on the S&P 500 priced at 1784.49 to create synthetic cash. The contract had a multiplier of \$150, and expired in six months. The dividend yield on the S&P 500 index and the risk free rate were 0.56% and 5.45% respectively.

Ramos read an article on money spreads to better understand how such strategies can be utilized by equity portfolio managers. When mentioning examples of money spread strategies, the article made the following comment:

“For most money spreads, the maximum loss at expiration is the net premium paid.”

25. The duration of TAM’s bond portfolio after taking the appropriate swap position will be *closest* to:

- A. 4.53.
- B. 4.88.
- C. 5.73.

26. To achieve his objective of hedging currency risk, the amount of euros that Ramos will have to deliver each quarter is *closest* to:

- A. €2,580,299.
- B. €3,759,039.
- C. €4,369,002.

27. Which of the following would *best* achieve X-Tech’s objective of removing the call feature from their callable issue?

- A. Purchasing a receiver swaption with an exercise rate of 15%.
- B. Selling a receiver swaption with an exercise rate of 10.5%.
- C. Buying a payer swaption with an exercise rate of 19.5%.

28. Smith is *most* accurate with respect to:

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

29. When Smith created synthetic cash for the pension fund, the number of units of stock delivered at contract expiration would have been *closest* to:

- A. 47,920.
- B. 48,764.
- C. 48,900.

30. The article's comment is *most* accurate with respect to:

- A. bull spreads but not bear spreads.
- B. butterfly spreads with calls but not butterfly spreads with puts.
- C. bull and bear spreads but not a sandwich spread.

Questions 31 through 36 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.

31. 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.

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

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

33. With regards to portfolio construction, Solanki's Approach 2 is *most likely*:
- A. optimization.
 - B. blended approach.
 - C. stratified sampling.
34. 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.
35. 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.
36. 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 37 through 42 relate to Alternative Investments.**Tanya Cohen Case Scenario**

Tanya Cohen is the chief financial officer at ‘The York Investment Firm’ (YIF), an asset management firm established in New York, U.S.A. YIF is known in the investment community as a successful equity portfolio management firm and a reliable investment research provider. Due to high success with portfolio strategies in the equity market, Cohen has now expanded the firm’s services to include other asset classes including modern alternative investments like hedge funds, managed futures and distressed securities, as well as traditional alternative investments like commodities and real estate. One of the firm’s clients, who has been offered the opportunity to invest in alternative investments, is Dean Wilson, a successful entrepreneur owning and operating a business worth \$35 million. Cohen has advised Wilson to invest in a private equity fund offered by the firm. Although the fund has the possibility of generating extreme returns relative to the mean, with some unusual degree of frequency, Cohen believes that Wilson has the ability to bear high risk given his accumulated wealth. During a client meeting with Wilson, Cohen convinced him to invest in the fund to capture return and diversification benefits.

YIF introduced an investment vehicle around two years ago that tracked the commodity sector of the U.S. market. The benchmark for the fund is the S&P Commodity Index, an index that provides returns comparable to passive long positions in commodity futures contracts. Cohen is trying to determine the return to this index for the current year. He noticed that relative to the previous year, the U.S. economy most likely entered the early expansion phase this year since interest rates decreased and investor confidence rose. In addition, inventory levels for commodity producing companies remained low, but started to rise as producers began to stock inventories in anticipation of future growth. Cohen is trying to estimate the effects of these changes on the commodity index return components.

The York Investment Firm also offers its clients hedge funds following equity based strategies, including equity market neutral, hedged equity and merger arbitrage strategies. William Hiney and Gregor Tavenner are portfolio managers at the firm heading the team responsible for the management of the hedge funds. YIF pays a 2% AUM fee to hedge fund managers and a 20% incentive fee subject to a high water mark provision. In 2007, the high water mark was set at a net asset value level of \$55 million and managers were paid an incentive fee based on the highest net asset value they achieved: \$59 million. The following exhibit displays information about the highest net asset value achieved during the years 2008, 2009 and 2010.

Exhibit 1
Highest net asset value achieved by hedge fund managers

Year	Net Asset Value
2008	\$62 million
2009	\$60 million
2010	\$62.5 million

During a meeting with Cohen, Tavenner mentioned that the performance of the equity hedge funds at YIF was remarkable for the past few years. He stated that the hedge funds risk adjusted performance, as measured using the Sharpe ratio, was very high. For this reason, Tavenner proposed that YIF should advise high net worth clients and institutions with a high ability to bear risk, to invest more of their funds in these investment vehicles. Cohen, however, is skeptical about the performance of the hedge funds. To corroborate Tavenner's findings, Cohen gathers the following information:

1. Almost all the equity hedge funds invest in a total return swap in which they pay the best and worst returns of their benchmark index each year and receive a fixed cash flow.
2. The funds invest in illiquid assets that are marked to market infrequently.
3. The managers used to calculate the Sharpe ratio using annualized standard deviation of monthly returns. Now they use the annualized standard deviation of daily returns.

After his analysis of the firm's hedge funds, Cohen reviewed an article on alternative investments to gain further insight into their historical performance and special issues and concerns. The article made the following comments:

Statement 1: "Due to certain limitations of the Sharpe ratio as a performance measurement tool for hedge funds, hedge fund managers use other ratios as part of their analysis. Two of these are the Calmar ratio and the Sterling ratio, both of which use a risk measure computed the same way, but use a different return measure in the numerator."

Statement 2: "Hedge fund indices may not reflect true performance. One of the reasons is the lack of security trading which may lead to a stale price bias, lower correlations than expected, and lower measured standard deviations than would exist if actual prices existed."

Cohen is managing an endowment fund worth \$45 million that supports social activities in the state of New York. The endowment's required spending rate is 5.0% a year and since it has been established to serve social causes in perpetuity, the endowment's board has an objective of preserving the real purchasing power of the assets. The fund is currently invested 60% in stocks and 40% in bonds, and the cost of earning investment returns is 75 basis points a year. Cohen is considering the inclusion of real estate as an asset class to improve the performance of the portfolio. Exhibit 2 presents the expected return and standard deviation of asset allocations excluding and including real estate.

Exhibit 2
Forecast Data

Measure	60/40 stocks/bonds (%)	50/35/15 stocks/bonds/direct real estate investment (%)
Expected return	8.5%	8.2%
Standard deviation	11.99%	10.01%

The U.S. risk free rate is 3.5%, and the forecasted inflation rate is 2.5%.

37. Given the above information, emphasis on which of the following factors related to alternative investment selection for Wilson should *most likely* be increased?
- Decision risk and tax issues only.
 - Tax issues and determination of suitability only.
 - Decision risk, tax issues and determination of suitability.
38. Given the information about the U.S. economy, what is the *most likely* impact of changes in the economy on the collateral return and roll return of the S&P Commodity Index?
- The collateral return increased but the roll return decreased.
 - The roll return increased but the collateral return decreased.
 - Both the roll return and the collateral return decreased.
39. Using the information given in Exhibit 1, hedge fund managers at YIF *most likely* earned incentive fees during the year(s):
- 2008 only.
 - 2008 and 2010 only.
 - 2008, 2009 and 2010.

40. Which of the above points that Cohen has gathered to assess the accuracy of the hedge funds performance at his firm would *least likely* inflate the stated Sharpe ratio?
- A. 1 only.
 - B. 1 and 3 only.
 - C. 3 only.
41. The article on alternative investments is *most* accurate with respect to:
- A. Statement 1 only.
 - B. Statement 2 only.
 - C. neither Statement 1 nor Statement 2.
42. Should Cohen advise the endowment's board to add real estate to their current portfolio?
- A. No.
 - B. Yes, because adding real estate will improve the Sharpe ratio of the fund from 0.417 to 0.469.
 - C. Yes, because adding real estate will decrease the standard deviation from 11.99% to 10.01%.

Questions 43 through 50 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)

	Cash flow yield stated on a semi-annual bond basis	Annualized convexity	Annualized Macaulay duration
Portfolio A	9.11	145.06	15.01
Portfolio B	8.97	122.10	15.02
Portfolio C	8.99	133.90	14.9

*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.

Exhibit 2: Duration Matching Strategy

	Portfolio A	Portfolio B	Portfolio C
Modified Duration	7.55	7.56	7.54
Convexity	65.10	74.20	69.14
BPV (in US \$millions)	12.40	12.43	15.77

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.

43. 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.
44. Pickens is *most* accurate with respect to:
- A. Statement 1 only.
 - B. Statement 2 only.
 - C. both statements 1 and 2.
45. 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.
46. 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.

47. 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.
48. 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 49 through 54 relate to Capital Market Expectations.

Chris McCearry Case Scenario

Chris McCearry is the chief economist at Indigo Investment Management (IIM), an asset management and financial advisory firm in USA. McCearry works at the research department of the firm with a team of research analysts, including statisticians, portfolio managers, financial analysts and economists. McCearry is currently performing a country analysis of Russia and Brazil, both emerging market economies considered by IIM as attractive inclusions to their emerging markets fund. After his comprehensive analysis of the countries, McCearry made the following recommendations for each country:

Russia: During the past year and a half, businesses in Russia have been increasing production and have seen a significant rise in sales and profits. They have been building inventories to meet sales, so that, until recently, the inventories reached a significant high level relative to Russia's historical inventory levels. Given such a positive outlook, I believe we should invest in cyclical stocks in Russia, as they would gain the most from such changes.

Brazil: The inventory to sales ratio in Brazil has moved down significantly after following a falling trend for the past fourteen months. In addition, interest rates are low and unemployment is high in the country. I believe this is a point of economic weakness so investing in stocks would be a bad choice.

McCearry has been assigned the task of analyzing the economic scenario of Japan, one of the major developed economies in the world. During his analysis, McCearry discovered that asset prices in the country have fallen considerably, as measured using consumer price indices. Also, the interest rates in the Japanese economy lie in the range of 0.88%-1.0%. McCearry is not sure how this scenario can affect the Japanese economy.

After completing his country analysis of Japan, McCearry met with Liz Radley, a research analyst at IIM. During a conversation with McCearry, Radley mentioned the use of the Taylor rule as a predictor of the central bank's behavior in a country. She stated that since the rule could provide a reasonably accurate description of the central bank's stance, she is using it to predict the optimal short-term interest rate for the U.S. over her forecast period. Exhibit 1 presents some information she gathered over her forecast horizon.

Exhibit 1
U.S. Economic Information

The short-term interest rate when GDP growth is on trend and inflation on target	4.5%
The current short-term interest rate	5.0%
The inflation target	3.0%
The GDP trend rate	3.75%
Inflation forecast	4.5%
Historical inflation	4.75%
GDP forecast	2.5%

As their conversation continued, McCearly made the following comments to Radley:

Statement 1: “Two years ago, the U.S. economy went through a slowdown as unemployment increased and the economy saw a large decline in business investment. However during the same period, the U.S. budget deficit rose because tax revenues fell and government spending on unemployment benefits increased. This served as a stimulus to the economy, which caused it to revive in a year.”

Statement 2: “The fiscal and monetary policies of a government can have an effect on the yield curve. If the both policies are expansive, the yield curve is steep. If both are tight, the yield curve is inverted. However, if one is tight and the other is loose, the yield curve tends to be flat.”

McCearly has invested his own portfolio in diversified Mexican stocks. However, he is not sure how his investment would perform in the coming few years. As part of his assessment of the Mexican economy, McCearly gathered the following information:

1. The Mexican government has been running a budget deficit for the past few years and the deficit has increased over the last two years.
2. The Mexican labor market is subject to rules and regulations governing the hiring and firing of employees.
3. The Mexican government has reduced trade tariffs and barriers, which has increased competition and reduced stock market valuations in the country.

In addition, as part of the country risk analysis of Mexico, McCearly gathered the following information:

1. The ratio of the fiscal and current account deficit to GDP has persistently been above 4%.
2. The ratio of debt to current account receipts is above 200% and the ratio of reserves to short-term debt is below 100%.

McCearly will use this information to assess the risks of investing in the country's capital markets.

49. With respect to his recommendations regarding Brazil and Russia, McCearly is *most* accurate with respect to:
- A. Russia only.
 - B. Both Brazil and Russia.
 - C. Neither Brazil nor Russia.
50. The economic scenario in Japan is *least likely* a threat to the economy because it:
- A. threatens a recession and decreases resistance to a reduction in wages.
 - B. tends to undermine debt-financed investments.
 - C. negatively affects commodity-producing businesses.
51. Using Exhibit 3, the optimal short-term interest rate in the U.S. is *closest* to:
- A. 4.625%.
 - B. 4.750%.
 - C. 5.125%.
52. McCearly is *most* accurate with respect to:
- A. Statement 1 only.
 - B. Statement 2 only.
 - C. neither Statement 1 nor Statement 2.

53. Which of the above points regarding the Mexican economy *most likely* boosts trend growth in the country?
- A. Point 3 only.
 - B. Points 1 and 2 only.
 - C. Points 2 and 3 only.
54. Which of the above points regarding the country risk analysis of the Mexican economy *most likely* indicates high risk?
- A. Point 1 only.
 - B. Point 2 only.
 - C. Both points 1 and 2.

Questions 55 through 60 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 since 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.

**Exhibit 1
Portfolio A**

Date	Market Value (\$)	Cash Flow (\$)	Market Value After Cash Flow (\$)
05/31/09	495,000		
06/13/09	550,000	135,000	
06/22/09	715,000		
06/30/09	867,000		

Exhibit 2
Portfolio B

Date	Market Value (\$)	Cash Flow (\$)	Market Value After Cash Flow (\$)
05/31/09	730,400		
06/13/09	789,304		
06/22/09	883,000	\$65,000	
06/30/09	1,450,394		

- 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**

	Quarter	
Additional investment	2	-\$1,000,000
Cash distribution	4	\$650,000
Cash distribution	7	\$490,000
Ending value	8	\$4,200,000

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.

55. 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.
56. 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%.
57. 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.

58. 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.

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%.

60. 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.