2017 Level III Mock Exam AM

The 2017 Level III Chartered Financial Analyst (CFA®) Mock Examination has 60 questions. To best simulate the exam day experience, candidates are advised to allocate an average of 18 minutes per item set (vignette and 6 multiple choice questions) for a total of 180 minutes (3 hours) for this session of the exam.

Please be advised this mock exam contains 10 item sets for the morning session and 10 items sets for the afternoon session.

The live exam morning session will consist of a variable number of essay questions for the morning session and the afternoon session will consist of 10 item sets.

The 10 additional item sets provided in the morning session of the mock exam are for supplementary preparation purposes only and does not represent the format candidates will experience on exam day.

Questions	Topic
1–6	Ethical and Professional Standards
7–12	Behavioral Finance
13–18	Private Wealth Management
19–24	Portfolio Management for Institutional Investors
25–30	Economics
31–36	Fixed Income Portfolio Management
37–42	Equity Portfolio Management
43–48	Alternative Investments
49–54	Risk Management Applications of Derivatives
55–60	Global Investment Performance Standards
Total:	**180**

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2017 LEVEL III MOCK EXAM AM

Rayne Brokers Case Scenario

Erin Mutini, CFA, a South African resident, is an employee of Oakwood Asset Management (OAM), an asset management company based in South Africa. OAM manages and sells its branded mutual funds and unit trusts through agents across Africa. Mutini was recently sent to Uganda to oversee OAM's new agency agreement with Rayne Brokers (Rayne), a licensed Ugandan stock brokerage company with a strong retail customer base.

Part of Mutini's oversight role is to establish policies and procedures to ensure the Ugandan sales force represents OAM in a professional manner. As a condition of its agency agreement, OAM requires all of Rayne's sales agents to adhere to South African financial regulations, generally considered to be stricter than those in Uganda. OAM also requires all of its sales agents to abide by the CFA Code of Ethics and Standards of Professional Conduct. OAM's lawyer has indicated South African laws are stricter than the CFA Code and Standards.

To inform Rayne sales agents of their responsibilities under the OAM agency agreement, Mutini holds a meeting with the agents to discuss the financial regulations of South Africa and the CFA Code and Standards. To conclude the meeting, Mutini describes OAM's annual competition amongst its sales agents where the winner is determined by the value of products sold (assets under management), fees generated, and the number of new clients brought in. The competition prize is an all-expense paid two-week holiday for two to Mauritius. Mutini advises the staff they should concentrate their sales efforts on OAM's front-end load funds since they earn the highest fees. She adds staff should not disclose this competition to clients.

Mutini next meets with Rayne supervisors to specifically discuss their roles in upholding the CFA Standards. She informs them they are responsible for the prevention of any violations of laws, rules, regulations or the Code and Standards by the staff directly under their supervision. To make their job easier, instead of focusing equally on all of the requirements Mutini suggests the supervisors should concentrate on:

- Communicating compliance policies and procedures to all covered staff;
- Undertaking periodic reviews to ensure procedures are followed; and
- Enforcing investment related policies.

Later that day, Mutini scrutinizes Rayne's marketing material with Rayne's most successful sales agent, Tom Okello, another CFA charterholder. They are preparing for a sales meeting to introduce OAM products to a potential client. Mutini notices Rayne's responsibility to uphold the CFA Code and Standards is not mentioned anywhere in the marketing material. Neither does the material mention that some of Rayne's employees are CFA charterholders. Mutini notices Okello does not use the CFA designation on his business card. When Mutini asks him why, he responds, "If I use it, people will think I have a duty to Rayne's clients. I don't have a duty to clients, as stockbrokers in Uganda are not required to uphold a fiduciary duty. I don't want to mislead our clients by using the CFA designation."

During the sales meeting with the potential client, Okello makes the following statements:

Statement 1 "Before making an investment for any of our mutual funds or unit trusts, Rayne follows an extensive due diligence process and research analysis. We will only invest in the company if that investment meets the investment criteria that I have outlined to you."

Statement 2 "Every six months you will be mailed an itemized investment statement with cash flows so that you can see if your portfolio is meeting your investment objectives. In addition, you can obtain other information about our firm and investment process from our website, which is updated on a regular basis to ensure the integrity of the site as well as offer confidentiality and security to our clients. For your security, we do not post client statements on the website."

1 According to the CFA Code and Standards, if there is a conflict, Mutini should *most likely* adhere to:

A Uganda's laws and regulations.

B South Africa's laws and regulations.

C the CFA Code of Ethics and Standards of Professional Conduct.

2 By participating in OAM's annual competition, Rayne employees *least likely* violate which of the following CFA Standards?

A Misrepresentation.

B Independence and Objectivity.

C Additional Compensation Arrangements.

3 In her meeting with Rayne supervisors, Mutini is *least likely* correct with regard to:

A communicating with staff.

B undertaking periodic reviews.

C enforcing investment related policies.

4 Given Okello's comment regarding his reason for not using the CFA designation, he will *most likely* violate which of the following CFA Standards of Professional Conduct?

A Duties to Clients.

B Misrepresentation.

C Reference to CFA Designation.

5 What CFA Standard did Okello *most likely* violate in his Statement 1?

A Suitability.

B Misrepresentation.

C Diligence and Reasonable Basis.

6 Does Okello's Statement 2 *most likely* meet the recommended procedures for compliance with the CFA Standards of Professional Conduct?

A Yes.

B No, with regard to investment statements.

C No, with regard to the company's website.

Green Case Scenario

Doug Green is a Professor of Finance at a major university. Elizabeth Weaver is a Managing Director at Gates Investment Management. Gates focuses exclusively on high net worth clients with assets over $10 million dollars. Green and Weaver are panelists at an investment conference contrasting traditional finance with behavioral finance.

In Green's opening remarks, he discusses how traditional finance drives investment decision making. He explains that traditional finance is grounded in neoclassical economics and is normative, indicating how people and markets should behave. Green comments that individuals are assumed to be risk-averse, rational investors, who are self-interested utility maximizers. He concludes with the following three statements regarding traditional finance:

Statement 1 Market prices reflect all available and relevant information;

Statement 2 Investors have access to perfect information; and

Statement 3 Investors process all available information based on their own experiences.

Weaver's opening remarks focus on the impact of behavioral finance on our understanding of investment decision-making. She explains behavioral finance is largely grounded in psychology and attempts to understand and explain observed investor and market behaviors. Weaver states she sees the impact of behavioral finance every day and notes individuals are neither perfectly rational nor irrational. She challenges the validity of the rational economic man (REM) on the basis that it disregards the inner conflicts that people face and the limitations of individuals in making decisions.

Green moves on to discuss Utility Theory by stating people maximize the present value of utility subject to the present value of their budget constraints. He explains utility can be thought of as the level of relative satisfaction received from the consumption of goods and services. Green adds that decision makers choose between prospects by comparing their expected utility values. He stresses it is important to remember that the determination of value is based on price. Green remarks there are four axioms of utility theory and if a decision maker satisfies the four axioms, they are said to be rational.

Weaver responds to Green's statement by remarking that behavioral finance challenges the assumptions of traditional finance. It also attempts to understand and explain actual investor and market behaviors. She explains that instead of basing its assumptions on idealized behavior, it bases them on observed behavior. She recounts an instance when an elderly client asked her to realize losses in her portfolio to offset taxable realized gains. However, the very next day the same client called her in a panic to ask why her cash balance was so high.

Weaver discusses how decisions are shaped by the decision-making process itself. She provides the following example:

> "A new client is interested in becoming an antique car investor and requested I make available $200,000 from his portfolio so he could start his collection. Shortly after the money was made available, the client visited an antique car auction not far from his home. Unfortunately, the auction had a limited number of cars meeting his requirements. He was drawn to one antique car in particular, even though it was missing several of the features he wanted. After some consideration he decided to purchase it anyway. Within an hour, his purchase was placed in storage for safekeeping."

The final topic of the day was the impact of behavioral finance on capital markets. After a rigorous debate for and against the Efficient Market Hypothesis, Green and Weaver reached the following conclusions:

Conclusion 1	Support exists for both efficient markets and anomalous markets.
Conclusion 2	By understanding investor behavior, the investment solutions that are constructed will be closer to the rational solution provided by traditional finance.
Conclusion 3	If a market is strong form efficient, sophisticated investors may be better positioned to outperform less savvy participants.

7 Which of Green's opening statements is *least* likely correct regarding traditional finance assumptions?

A Statement 3

B Statement 2

C Statement 1

8 Are Weaver's criticisms concerning the rational economic man (REM) *most likely* correct?

A Yes.

B No, with regards to the inner conflicts people face.

C No, with regards to limitations in decision-making.

9 Are Green's statements regarding Utility Theory *most likely* correct?

A No, with regard to the four axioms.

B No, with regard to determination of value.

C Yes.

10 What behavior has Weaver's elderly client *most likely* exhibited?

A Emotional bias

B Bounded Rationality

C Cognitive error

11 What behavior did Weaver's new client *most likely* demonstrate when he purchased the antique car?

A Satisficing

B Utility maximization

C Using heuristics

12 Which of Green and Weaver's conclusions regarding market behavior is *least likely* correct?

A Conclusion 1

B Conclusion 3

C Conclusion 2

Boylan Case Scenario

The human resources department of The Tredway Medical Group hired Joe Boylan, a private wealth consultant, to provide a series of presentations to its employees covering the fundamentals of financial planning.

Boylan's current presentation deals with two aspects of personal risk management related to age: premature death and outliving one's resources. He begins his presentation by stating that people often harbor misleading views about life insurance. As an example, he provides them with the following three comments which he claims to have heard many times in the past:

Comment 1 Since everyone is going to die, everyone needs life insurance.

Comment 2 Life insurance is an efficient method of risk reduction.

Comment 3 Premiums on a newly issued life insurance policy are higher when interest rates are lower.

Boylan states that when considering life insurance needs and investment strategies, it is important to understand the notion of human capital. He provides the following four examples of individuals connected to the health care industry in Exhibit 1 and **asks** the audience which of them has the highest human capital risk.

Exhibit 1 Four Individuals Connected to the Health Care Industry

Henry	■ A 33-year-old orthopedic surgeon. ■ A leading financial publication ranks orthopedic surgery as the highest paying medical specialty. ■ Has been practicing for three years but still has over $80,000 of student loans outstanding. ■ Married with a one-year-old son.
Marie	■ A 62-year-old cardiac surgeon who is celebrating her birthday today. ■ Plans on retiring in two years, on the day before she turns 64. ■ The previously-mentioned financial publication ranks cardiac surgery as the second highest paying specialty. ■ A member of Mensa (the largest and oldest high IQ society in the world) with the highest Mensa IQ of any other Mensa member in her profession. ■ A widow with three financially independent adult children. ■ Has no debt and her total assets calculated using a traditional balance sheet amount to $4 million, which includes $3 million in stocks and bonds and $250,000 in real estate.
Jason	■ A 50-year-old medical technician. ■ Also a member of Mensa, with a perfect score on the Mensa IQ test. ■ A single parent with a 20-year-old daughter. ■ Has no outstanding debt and an investment portfolio currently valued at $125,000. ■ His employer provides him with a defined benefit pension whose pension payments will adjust with inflation.
Janice	■ Jason's twin sister. ■ Works as a stock broker specializing in medical technology. ■ Has no outstanding debts and an investment portfolio currently valued at $375,000. ■ Her employer provides her with a defined contribution pension. ■ Unmarried with no dependents. ■ Has about the same level of risk tolerance as Jason.

Note: All of these individuals are non-smokers and are in excellent health given their respective ages.

Boylan provides selected information from standard mortality tables along with some market data and characteristics of Marie's medical specialty in Exhibit 2. In addition, he also includes several assumptions which he uses to determine Marie's total assets under a holistic balance sheet.

Exhibit 2 Inputs used in determining Marie's Assets under a Holistic Balance Sheet

Mortality Statistics for Non-smoking Females

Age	62	63	64
Probability of Dying	0.0059	0.0069	0.0079

Characteristics of Income for Cardiac Surgeons

Annual wage growth rate	5%
Occupational income volatility	1%
Nominal risk free rate	**3%**
Marie's current employment income	$430,000
Marie's current pension value	$1.75 million

Assumptions:
- All income is received at the end of the year
- All probability-based calculations are carried out to 4 decimal places.

One of the attendees at the presentation told Boylan that she had accessed several life insurance carrier websites but found that it was very hard to compare the costs of their whole life policy offerings, as the companies often used different assumptions about the amount of the death benefit, premiums, cash value growth rates and dividend reinvestment rates. Using the information in Exhibit 3 for a hypothetical whole life policy, Boylan illustrates a convenient method for comparing the cost of different policies when these variables change.

Exhibit 3 Hypothetical Whole Life Insurance Policy

Death benefit	$300,000
Expected holding period	25 years
Annual premium, paid at start of year	$2,750
Estimated cash value at the end of 25 years	$60,000
Discount rate	6%
Dividend reinvestment rate	6%
Estimated annual dividend, paid at year end	$850

Boylan turns his attention to investments. He tells his audience that if the twins, Janice and Jason, wish to invest optimally, they should consider the nature of their human capital when making asset allocation decisions. He asks how this would affect their relative allocation to high grade government bonds.

Boylan tells the audience that life annuities are a convenient investment to deal with longevity risk. He again uses the twins, Jason and Janice, as an example, in discussing some of the characteristics of these annuities. Assuming that they were both to invest the same amount into this product, he makes the following statements:

Statement 1 If both of them were to purchase the annuity immediately, they would both receive the same annual income yield.

Statement 2 If Jason were to purchase the annuity in 10 years rather than immediately, his annual income yield would be higher at that time than now.

Statement 3 If Janice were to add a 10-year period certain option to her annuity, her income yield would be reduced when compared to not having the option, but it would be reduced by greater amounts the longer she waits to purchase the annuity.

13 Which of Boylan's initial comments about life insurance is *most* accurate?

A Comment 2

B Comment 1

C Comment 3

14 From Exhibit 1, the individual who has the *greatest* amount of human capital at risk is:

A Marie.

B Henry.

C Jason.

15 Using Exhibits 1 and 2, Marie's total assets under a holistic balance sheet are *closest* to:

A $6,558,000.

B $6,563,000.

C $4,808,000.

16 Using the information in Exhibit 3, the surrender cost index per $-thousand per year for the hypothetical whole life policy is *closest* to:

A $3.05.

B $2.69.

C $6.49

17 The *most* appropriate response to Boylan's question about the twins' relative allocation to high grade bonds is that, when compared to Jason, the proportion in Janice's investment portfolio should be:

A the same.

B lower.

C higher.

18 Which of Boylan's statements about life annuities is *least* accurate?

A Statement 2

B Statement 1

C Statement 3

Andrei Zubov Case Scenario

Andrei Zubov is a portfolio manager for Greenhill Trust based in Connecticut. Greenhill provides a range of wealth advisory and institutional client services. Zubov is preparing to meet with three new clients.

CHM Corporation is a US based company that manufactures sports equipment. The company's employees participate in a defined contribution plan in which investments in the plan is participant directed. Greenhill has been asked to develop an Investment Policy Statement for the plan and help select a menu of investment options for plan participants.

Jennifer Zola is a member of the investment committee for the defined benefit pension plan for GIC Products, a company that manufactures beauty, healthcare and homecare products. The company's pension assets are currently managed in-house and Zola would like Greenhill to assume management of their pension assets. Selected information regarding the company and its pension plan is provided in Exhibit 1.

Exhibit 1 GIC Products Selected Pension Plan Information

Funded status [excess or (deficit)]	$25 million
Liability discount rate	5.0%
Annual liquidity need as percentage of plan assets	1.0%

Zola asks Zubov, "Based on the information provided could you give us some preliminary guidance on an appropriate return objective?" Zubov responds, "In this instance, a return objective of up to 100 basis points higher than the liability discount rate would be appropriate. This return objective would not only help the plan fund pension obligations but potentially minimize future pension obligations and maintain or increase future pension income."

Zola also provides the following additional information:

- the company has enjoyed steadily rising earnings for the past 10 years and expects this trend to continue in the future
- the company has debt to total assets of approximately 10 percent
- the company would like to discuss the possibility of modifying the current pension plan by offering an early retirement provision allowing for lump-sum distributions

Zola asks Zubov to explain his overall approach to pension asset risk management. Zubov explains that there are two important considerations, "The first consideration is portfolio allocations to different sectors. Specifically, the plan's risk tolerance will be higher if we overweight the pension portfolio with equity investments in companies in the beauty, healthcare, and homecare industry. The second consideration is to view risk from an asset liability management approach. That is, the focus should be on managing the volatility of the pension surplus."

The Hoven University (HU) has asked Greenhill to manage the university's endowment. The endowment's spending rule dictates that it makes an annual contribution of 4% of its year-end portfolio market value to support HU's operating budget. The annual endowment contribution represents 25% of HU's annual operating budget. The university's operating expenses are expected to grow at a rate of 2.5% annually, while the rate of inflation in the economy is expected to be 1% per year. Investment management expenses are estimated to be 0.65% of the market value of the endowment.

The investment committee has asked Zubov to provide his views on the risk and return objectives and liquidity constraints for the endowment. Zubov responds with the following statements:

- "Based on the information provided, an annual total return objective in the range 7% to 7.5% would be appropriate for the fund.
- In order to meet the endowment's spending needs for this year, the liquidity need is in the range 4.5% to 5% of the year-end portfolio value.
- Given the return objective and liquidity needs, the endowment's risk tolerance is high."

19 For the pension plan offered by CHM Corporation, it is *most likely* true that:

A plan participants bear the risk of early termination.

B the risk of investing is borne by the plan sponsor.

C once vested, retirement assets are readily portable.

20 An appropriate element of the Investment Policy Statement for CHM Corporation pension plan is *most likely* a specification of:

A investment alternatives.

B strategic asset allocation.

C return objectives.

21 Is Zubov's response to Zola regarding the return objective *most likely* correct?

A No, he is incorrect with regard to future pension contributions.

B Yes

C No, he is incorrect with regard to future pension income.

22 Based on information provided by Zola, a higher risk tolerance for GIC Products Pension Plan is ***least*** *likely* supported by:

A Zola's proposed modification to the current pension plan.

B earnings expectations for the company.

C the debt to total asset ratio.

23 Is Zubov's response to Zola's question *most likely* correct?

A No, the second consideration is incorrect.

B Yes.

C No, the first consideration is incorrect.

24 With respect to Zubov's statements to the investment committee of the Hoven University endowment, he is *least likely* correct with respect to:

A risk tolerance.

B total return objective.

C liquidity need.

Exeter Asset Management Case Scenario

Martin Standish is an economic analyst with Exeter Asset Management, a British firm that specializes in global funds for institutional investors, most of whom are based in the United Kingdom. Standish is identifying potential countries and asset classes to include in a developed markets fund that Exeter intends to introduce later this

year. He begins his work by collecting macroeconomic data with which he can assess the outlook and expectations for a set of investment opportunities he is considering. Standish observes the following data:

Exhibit 1 Inventory Cycle Data: Inventory to Sales Ratios for Selected Countries

Year	Sweden	Czech Republic	Switzerland
2014	1.30	1.43	1.35
2015	1.35	1.37	1.36
2016	1.51	1.24	1.34

Deeba Kumar, Standish's supervisor, stops by to see how his work is progressing. She asks him to research at least five additional countries for the new fund, and suggests Chile, Singapore, Great Britain, the United States and Denmark as potential candidates. She cautions Standish that he needs to be aware of interest rate linkages between these economies, and mentions three points that he should consider:

1 Since the Chilean peso appears to be undervalued relative to the British pound and is likely to rise, Chilean bond yields may be lower than they should be relative to British bonds.
2 The peg linking Denmark's currency to the euro is considered to be at risk and likely to break. Therefore, Danish bond yields are expected to drop if the Danish krone weakens relative to the euro.
3 After removing expected inflation, the real bond yield is likely to be similar in Singapore and Sweden.

Next, Standish begins to identify specific assets to include in the developed markets portfolio. He considers equally weighted positions in Chilean Real Estate, Swiss bonds, and US equities, among others. He reviews the forecasts of inflation for these three countries and notes that inflation is predicted to be above expected levels in Chile, but below expectations in both Switzerland and the United States. With this new information, he ponders how he should adjust the portfolio weights to reflect the economic forecast.

Exeter also manages an emerging markets fund. Standish has been asked to help Mary Jones, a new trainee, review the country risk associated with assets in that fund. Standish tells Jones that the evaluation process is similar to the evaluation of assets in developed countries, but with more emphasis on several key factors. Jones responds that her country risk analysis will focus on the balance of payments, debt level, and the political situation in each country.

Jones tells Standish that she is particularly concerned about currency risk in the emerging markets fund. She is worried that the fund's positions in Thailand may be at risk if there is a change in the value of the Thai baht (THB) relative to the British pound (GBP). Jones has gathered some projections (Exhibit 2) to assist her in analyzing the risk; she believes that Purchasing Power Parity (PPP) should provide a good model for esr1marmg any currency change.

Exhibit 2 Basis of Currency Risk Assessment for Thai Baht vs. British Pound

	Thailand	Great Britain
Predicted annual inflation rate for next 5 years	3.4%	1.9%
Current exchange rate: THB/GBP, i.e., THB per GBP	51.4801	

Jones and Standish discuss her estimate. Standish mentions that PPP can be combined with a relative economic strength forecast for a more complete analysis, and suggests to her that there are at least three strengths to the combined approach:

1 PPP provides a useful guide to the short-term direction of exchange rates;

2 Relative economic strength focuses on trade flows, so it is independent of short-term interest rates;

3 Relative economic strength captures the impact of news on the economy.

25 Based on the data provided in Exhibit 1, which country is *most likely* to show economic growth in the next several quarters?

A Switzerland.

B Sweden.

C Czech Republic.

26 Of Kumar's three points regarding interest rate linkages between countries proposed for the new fund, she is *least likely* correct with respect to bond yields in:

A Chile.

B Denmark.

C Singapore and Sweden.

27 When considering the proposed weights for the developed markets portfolio, the *most* appropriate adjustment for Standish to make is to reduce the asset weighting in:

A the United States.

B Switzerland.

C Chile.

28 The *most* important factor that Jones fails to consider in her country risk analysis for the emerging markets fund is:

A liquidity.

B privatization trends.

C currency competitiveness.

29 Based on Exhibit 2 and her proposed forecasting model, the *most* accurate prediction that Jones can make about the THB/GBP exchange rate in five years is:

A THB 55.7674 per GBP.

B THB 47.1928 per GBP.

C THB 52.2523 per GBP.

30 The *most* accurate of Standish's statements regarding the strengths of a combined approach to exchange rate forecasting is his statement:

A 2.

B 1.

C 3.

Franconia Notch Case Scenario

Mark Whitney, CFA, is the Chief Investment Officer of Granite State Partners, a fixed income investment boutique serving institutional pension funds. Paula Norris, a partner at consulting firm Franconia Notch Associates, is conducting due diligence of Granite's capabilities. At a meeting they go over a presentation Whitney has prepared.

The first page of the presentation addresses Granite's investment style for managing portfolios. It states:

> "Granite adjusts the portfolio's duration slightly from the benchmark, and attempts to increase relative return by tilting the portfolios in terms of sector weights, varying the quality of issues, and anticipating changes in term structure. The mismatches are expected to provide additional returns to cover administrative and management costs."

Norris asks Whitney about Granite's ability to successfully reflect, in its portfolios, its views on the market and the direction of interest rates. Whitney makes the following statements:

Statement 1 "Granite uses effective duration to measure the sensitivity of the portfolio's price to a relatively small parallel shift in interest rates. For large parallel changes in interest rates, we make a convexity adjustment to improve the accuracy of the estimated price change. We believe that parallel shifts in the yield curve are relatively rare; therefore, duration by itself is inadequate to capture the full effect of changes in interest rates."

Statement 2 "We address yield curve risk by using key rate durations. When using this method, we stress the spot rates for all points along the yield curve simultaneously. By changing the spot rates across maturities, we are able to measure a portfolio's sensitivity to those changes."

Statement 3 "We also measure spread duration contribution. This analysis is not related to interest rate risk. This measure describes how securities such as corporate bonds or mortgages will change in price as a result of the widening or narrowing of the spread to Treasuries."

Norris provides information on three clients she might refer to Whitney for portfolio management services, and asks him to design a dedication strategy for each. Whitney makes the following recommendations:

Client 1: "This bank has sold a five-year guaranteed investment contract that guaranties an interest rate of 5.00% per year. I would purchase a bond with a target yield of 5.00% maturing in 5 years. Regardless of the direction of rates, the guaranteed value is achieved."

Client 2: The defined benefit pension plan for this client has an economic surplus of zero. In order to meet the liabilities for this plan, I will construct the portfolio duration to be equal that of the liabilities. In addition, I will have the portfolio payments be less dispersed in time than the liabilities.

Client 3: This client's long-term medical benefits plan has known outflows over 10 years. Because perfect matching is not possible, I propose a minimum immunization risk approach, which is superior to the sophisticated linear program model used in the current cash flow matching strategy.

Norris asks Whitney what steps he takes to reestablish the dollar duration of a portfolio to the desired level in an asset-liability matching (ALM) application. Whitney responds: "First, I calculate a new dollar duration for the portfolio after moving forward in time and shifting the yield curve. Second, I calculate the rebalancing ratio by dividing the original dollar duration by the new dollar duration and subtracting one to get a percentage change. Third, I multiply the new market value of the portfolio by the desired percentage change from step two."

Norris then asks Whitney, "What sectors are you currently recommending for client portfolios?" Whitney responds: "I recommend investing 25% of the portfolio in mortgage-backed securities because they are trading at attractive valuations. I will not however buy floating rate securities because these do not hedge liabilities appropriately."

Norris asks how changing market conditions lead to secondary market trading in Granite's client portfolios. Whitney responds: "Our research teams run models to assess relative value across fixed-income sectors which, combined with our economic outlook, leads to trade ideas. For example, currently our macroeconomic team is concerned about the situations in several sovereign nations and the spillover effect to capital markets. These issues range from geopolitical risks that will likely increase the price of oil to outright sovereign defaults or restructuring."

31 The style of investing described in Whitney's presentation is *most likely:*

A a full replication approach.

B enhanced indexing by small risk factor mismatches.

C active management by larger risk factor mismatches.

32 Which of Whitney's Statements with regard to implementing its market and interest rate views is *least likely* correct?

A Statement 1.

B Statement 2.

C Statement 3.

33 Which of the following statements regarding Whitney's recommendations for Norris' three clients is *most likely* correct?

A Client 1 will only achieve the guaranteed value if the term structure of interest rates is downward sloping.

B Client 2 will meet the necessary conditions for a multiple-liability immunization in the case of a non-parallel rate shift.

C Client 3 will require less money to fund liabilities with the proposed strategy relative to cash flow matching.

34 Is Whitney's approach to rebalancing a portfolio using dollar duration *most likely* correct?

A Yes.

B No, there is no need to move forward in time.

C No, the steps do not provide the amount of cash needed for rebalancing.

35 The two risks that Whitney's is *most likely* exposed to given his recommendations on sectors are?

A interest rate risk and cap risk.

B contingent claim risk and cap risk.

C interest rate risk and contingent claim risk.

36 Whitney's secondary trading rationale is *best* described as:

A structure trades.

B credit-defense trades.

C sector-rotation trades.

Goldsboro Partners Case Scenario

Goldsboro Partners, an investment management firm, intends to offer more products invested in equities traded on the Singapore Exchange (SGX).

Goldsboro is developing the Goldsboro Singapore Index (GSI); a proprietary index of Singapore equities comprised of five stocks traded on the SGX with the largest market capitalization.

Goldsboro must decide how to structure the GSI. Information about the prices and market caps of these firms is found in Exhibit 1.

Exhibit 1 Five Largest Singapore Firms: Selected Information in USD

Firm	Price @ 1/1/2009	Price @ 1/1/2010	Change in Price	Market Cap @ 1/1/2009 (billions)	Market Cap @ 1/1/2010 (billions)	Change in Market Cap
SingTel	2.35	2.53	+7.7%	48.5	52.5	+8.2%
Wilmar	5.77	6.80	+17.9%	32.7	41.2	+26.0%
DBS Group	11.62	13.28	+14.3%	26.6	30.1	+13.2%
Jardine Matheson	23.94	26.71	+11.6%	25.3	27.6	+9.1%
UOB	12.73	14.07	+10.5%	23.9	26.8	+12.1%
Total	**56.41**	**63.39**		**157.0**	**178.2**	

Goldsboro has four large, institutional clients who indicated that they might invest a total of USD 240 million in a fund indexed to the GSI. These clients are very cost sensitive.

Goldsboro already offers two mutual funds that consist of stocks that are part of the Straits Times Index (STI), a value-weighted index of the 30 largest firms traded on the SGX. Exhibit 2 provides information about these two funds (GBl and GB2), the STI index, and all stocks traded on the SGX.

Exhibit 2 Comparison of Goldsboro's 2 Funds, the STI, and the SGX

	Fund GB1	Fund GB2	STI	SGX
Number of stocks	12	12	30	612
Average market cap	USD 12.4 billion	USD 13.2 billion	USD 13.7 billion	USD 2.7 billion
Dividend yield	1.5%	2.1%	1.6%	0.8%
P/E	21.7	16.8	21.4	24.7

(continued)

Exhibit 2 (Continued)

	Fund GB1	Fund GB2	STI	SGX
P/B	2.6	2.1	2.7	2.9
Projected EPS growth rate	11.0%	8.4%	11.2%	13.7%

Goldsboro also offers three independently managed funds, GB-STI-1, GB-STI-2, and GB-STI-3. The three funds are benchmarked against the STI index. For the year 2009, Jason Briggs, a client whose Singapore benchmark is the MSCI Singapore Free Index, pursued a core-satellite approach by investing in these three funds, earning a return of 12.4%. Information about these three funds, their returns, and Briggs' investments is found in Exhibit 3.

Exhibit 3 Briggs' Investments in Goldsboro's STI-benchmarked Funds

	GB-STI-1	GB-STI-2	GB-STI-3
Fund expected alpha	5%	2%	0%
Fund expected tracking risk	9%	5%	0%
Briggs' investment	USD 20 million	USD 20 million	USD 10 million
Return during 2009	15%	10%	12%

In 2009, the return on the MSCI Singapore Free Index was 11.7% and the return on the STI Index was 12.0%

37 Based on Exhibit 1, for the year 2009, assuming no stock splits or stock dividends for the stock components and no rebalancing, which of these index structures would have *most likely* resulted in the largest return for the GSI?

A A price-weighted index.

B A value-weighted index.

C An equal-weighted index.

38 Goldsboro's *best* choice for the GSI index portfolio structure is:

A a mutual fund.

B a pooled account.

C an exchange-traded fund.

39 According to the information provided in Exhibit 2, Fund GB1 is *best* characterized as having what equity style?

A Value

B Growth

C Market oriented

40 Goldsboro's Fund GB2 would appeal to an investor who is *most* closely focused on:

A relative strength.

B earnings momentum.

C price relative to intrinsic value.

41 The characterization of Briggs' investment as following a core-satellite approach is *most likely*:

A correct.

B incorrect, because too little of the portfolio was passively invested.

C incorrect, because the funds invested in are benchmarked against the wrong index.

42 During 2009, the "misfit" active return earned by Brigg's investments was *closest to*:

A 0.3%.

B 0.4%.

C 0.7%.

Tannenbach Case Scenario

The CFA Society Springfield is hosting a member luncheon event which will include a panel discussion on alternative investments. Jerry Tannenbach, President of the CFA Society Springfield, will lead the panel discussion. Chris Timdore, CIO of the Lance Fund and Dave Shaphold, CEO of Shinny Advisors are the two panelists. Lance Fund is a hedge fund which was established in 2006 and Shinny Advisors is a hedge fund consultant advising investors.

Tannenbach opens the panel discussion by describing some of the features of alternative investments. He suggests that more successful alternative investment managers add value by applying rigorous due diligence checkpoints. In addition, he suggests that alternative investments should earn a return premium since they are relatively illiquid in comparison to traditional investments.

Attendees are encouraged to ask questions of the panelists. The first question is from a society member who manages a private wealth firm. He is considering adding real estate to several client portfolios. From his initial research, he has formulated observations about direct equity investments in real estate and asks Timdore to comment on those observations:

Observation 1	A disadvantage is greater use of financial leverage.
Observation 2	Another disadvantage is higher transaction costs.
Observation 3	An advantage is lower volatility of returns.

Timdore explains why not all of these observations are correct.

The next question is from a society member who asks Timdore to discuss the Lance Fund in the context of style classification. Timdore discloses that the Lance Fund combines long and short positions in equity securities in order to capture changes in the price spread between a target company and an acquiring company following a deal announcement.

Tannenbach asks Timdore to demonstrate how the Lance Fund adds alpha when combined with a portfolio of traditional investments. Timdore replies that the Lance Fund is an absolute return investment vehicle whose performance can be measured in comparison to tracking portfolios which share similar risk and return characteristics. He indicates that the Lance Fund also utilizes the Sharpe ratio for risk adjusted performance measurement since the Sharpe ratio has no limitations with respect to measuring hedge fund performance.

Shaphold indicates that the Lance Fund is amongst a universe of 30 hedge funds which are used by Shinny Advisors for client portfolios. He offers the following due diligence guidelines for investors who are considering adding hedge funds to their portfolio.

Guideline 1: Incentive fees should apply only to new appreciation of a hedge fund's net asset value.

Guideline 2: Management fees are typically 1%, but for some hedge funds may reach as high as 2%.

Guideline 3: AUM fees are typically paid to both the hedge fund manager and the fund of hedge funds manager.

The final question is from a society member who asks Shaphold to discuss the investment risks of distressed securities. Shaphold states that legal judgements have the potential to impact investor outcomes with respect to selecting whether to invest in debt or equity. Understanding the court dynamics

43 Are Tannenbach's suggestions about alternative investments *most likely* correct?

A Yes

B No, because of due diligence.

C No, because of return premium.

44 Which of the observations about direct equity real estate investing is *least likely* correct?

A Observation 2

B Observation 1

C Observation 3

45 The *most* appropriate style classification for the Lance Fund is *likely:*

A Merger Arbitrage.

B Equity Market Neutral.

C Hedged Equity.

46 Are Timdore's comments about alpha and the performance measurement of the Lance Fund most *likely* correct?

A Yes.

B No, he is incorrect about the tracking portfolios.

C No, he is incorrect about the Sharpe ratio.

47 Which of Shaphold's due diligence guidelines *most likely* relates to a high water mark?

A Guideline 3

B Guideline 2

C Guideline 1

48 The investment risks being explained by Shaphold *most likely* relate to:

A J factor risk.

B event risk.

C market liquidity risk.

Matthew Wintermantle Case Scenario

Matthew Wintermantle is Managing Director and Head of Risk Management for Green Leaf Capital Advisors (GLCA). GLCA is a financial advisory and asset management firm based in Philadelphia, Pennsylvania, that offers services to institutional and private clients. Wintermantle is meeting with two senior associates, Martin Deiss and Sarah Wittke, to discuss select client portfolios.

GLCA manages a portfolio for Jinghan Cai, a private banking client. Cai's portfolio includes an investment in US large cap stocks with a current market value of USD 25,000,000.

Wintermantle has concluded that US large caps are likely to underperform over the next three months and has advised Cai to reduce exposure to US large caps. Cai agrees. Wintermantle indicates that he plans to reduce the portfolio's beta from 1.2 to 0.8 using a three month futures contract on the S&P 500 that is currently valued at USD 484,750 and has a beta of 0.9

Cai has USD 5,000,000 of cash in the portfolio, and he would like to utilize these funds to invest JPY 600,000,000 in the Japanese equity market. To preserve the portfolio's liquidity, Wintermantle proposes that Cai achieve the JPY 600,000,000 exposure by equitizing the portfolio's cash. He suggests using a three month futures contract on the Nikkei stock index which is currently valued at JPY 8,935,000. Japanese risk free bonds currently yield 1.5% per year. Cai agrees, but expresses concern about unfavorable moves in the value of the Japanese yen. He asks whether it would be possible to completely hedge foreign currency risk.

Wintermantle responds that, in order to fully hedge Japanese yen currency risk, he would need to hedge foreign equity market exposure as well as the currency exposure.

One of GLCA's largest institutional clients is Pathways Container Corporation (PWCC) an Orlando, Florida based manufacturing company. The PWCC pension fund has USD 800,000,000 invested in large cap US stocks with a beta of 1.35. Deiss expects US mid cap stocks to outperform large cap US stocks over the next few months and recommends GLCA use S&P 500 and S&P 400 mid cap futures to shift the USD 800,000,000 from large cap to mid-cap US stocks for a three-month period. The three month futures contract on the S&P 400 mid cap index is currently priced at $138,600 and has a beta of 0.95. Information for the S&P 500 futures contract has already been provided above. Given the favorable outlook for mid-cap stocks, Deiss suggests the mid cap stock allocation have a beta of 1.25.

The PWCC pension fund receives periodic cash flows from the plan sponsor. Wintermantle and his team discuss the use of futures to obtain exposure to specific asset classes in advance of the cash receipt. Diess states, "Because the cash has yet to be received, it is not possible to use futures to gain exposure to an asset class." Wintermantle disagrees and states, "In this case, it is possible to gain exposure to an asset class by taking long positions in risk free bonds and futures on the asset class." Wittke responds, "A long position in futures on the asset class is sufficient to gain exposure to the underlying asset. Specifically, it is equivalent to borrowing against cash to be received in the future and investing in the underlying asset."

GLCA also manages corporate cash for PWCC and the company has indicated it needs to make a EUR 3,500,000-dollar payment to a supplier based in Germany. Payment is due in 45 days but PWCC is concerned about the euro rising against the U.S dollar over this period. PWCC's Treasurer asks Wintermantle for advice on managing this exchange rate risk. Wintermantle discusses this with Wittke, and she indicates that this type of exchange rate risk is referred to as economic exposure and can be managed by entering into a long forward contract on the euro.

49 To reduce the beta of Cai's US large cap portfolio investment as desired, the number of S&P 500 futures contracts Wintermantle would need to sell is *closest* to:

A 46.

B 19.

C 23.

50 In order for Cai to equitize the portfolio's cash into the Japanese equity market exposure he is seeking, the amount of Japanese risk free bonds Wintermantle must purchase is *closest to*:

A JPY 596,000,000.

B JPY 600,000,000.

C JPY 609,000,000.

51 Is Wintermantle's response to Cai's question about fully hedging Japanese yen currency risk most *likely* correct?

A Yes

B No, he is incorrect with regard to hedging foreign equity market exposure.

C No, he is incorrect with regard to hedging currency risk.

52 In order to reallocate the equity exposure in the PWCC pension fund Deiss would *most likely* have to sell:

A 2,476 S&P 500 futures and buy 7,595 S&P 400 mid cap futures.

B 1,100 S&P 500 futures and buy 4,387 S&P 400 mid cap futures.

C 743 S&P 500 futures and buy 1,732 S&P 400 mid cap futures.

53 Whose comments are *most likely* correct with respect to PWCC's pension plan using futures to gain exposure to an asset class in advance of the cash receipt from the plan sponsor?

A Deiss

B Wittke

C Wintermantle

54 Is Wittke's response to Wintermantle regarding exchange rate risk for the payment to the German supplier *most likely* correct?

A Yes.

B No, she is incorrect about the type of exchange rate risk.

C No, she is incorrect about the type of forward contract.

Anton Case Scenario

Beatriz Anton is the chief compliance officer at Long Pond Advisors, an asset management firm catering to institutional investors. Long Pond is not currently GIPS compliant, but Anton would like to market the firm as being compliant as soon as possible. To assist Anton in achieving compliance, she hires Ana Basco from Nantucket Advisors to provide guidance on achieving compliance.

At their initial meeting to discuss a framework for the implementation of GIPS standards, Anton asks Basco what she believes the fundamentals of GIPS compliance encompass. Basco responds, "A good starting point is input data because the Standards rely on the integrity of input data to accurately calculate results. Portfolios must be valued in accordance with the definition of fair value, not cost or book values. In fact, fair value supersedes market value. Transactions are reflected in the portfolio at settlement when the exchange of cash, securities, and paperwork involved in a

transaction is completed. Accrual accounting is used for fixed income securities and all other assets that accrue interest income; dividend-paying equities accrue dividends on the ex-dividend date."

Basco then asks Anton about Long Pond's policies for return calculation methodologies. Anton responds that she has recently implemented the following polices:

Policy 1 Total return is calculated for portfolios using time-weighted rates of return computed by geometrically linking the periodic returns. Both realized and unrealized gains and losses are used in the calculation.

Policy 2 Large- and mid-cap equity portfolios are revalued on the date when capital equal to 10 percent or more of current market value is contributed or withdrawn. Small-cap and fixed income portfolios use a 5 percent threshold.

Policy 3 Cash and cash equivalents are excluded in total return calculations. Custody fees are not considered direct transaction costs. Returns are calculated after deduction of trading expenses.

Their conversation turns to the construction of composites and composite return calculations. Anton tells Basco,

> Long Pond calculates composite returns by asset-weighting the individual portfolio returns using beginning-of-period values. For periods beginning 1 January 2010, we calculate composite returns by asset weighting the individual portfolio returns quarterly. All actual, fee-paying, discretionary portfolios are included in at least one composite. Non-fee-paying discretionary portfolios are also included in a composite, and appropriate disclosures are provided. Client portfolios that restrict the purchase of certain securities are excluded if this restriction hinders the portfolio manager's ability to execute the investment strategy. We consider a hierarchical structure of criteria for composite definition that promotes primary and secondary strategy characteristics, such as asset classes, style, benchmarks, and risk/return characteristics. The composites are not always defined according to each level of the hierarchy.

Anton then provides Basco a recent presentation to a prospective client for Long Pond's mid-capitalization composite. Details of this presentation are found in Exhibit 1.

Exhibit 1 Mid-Capitalization Equity Composite Benchmark: Russell Midcap Index

Column >	1	2	3	4	5	6	7
Year	Gross-of-Fees Return (%)	Net-of-Fees Return (%)	Benchmark Return (%)	Number of Portfolios	Internal Dispersion (%)	Total Assets ($m)	
						Composite	Firm
2009	4.4	3.4	3.6	5	3.1	125	1,000
2010	2.7	1.7	6.2	8	4.0	220	1,150
2011	–1.5	–2.5	–4.3	7	1.9	345	910
2012	8.3	7.3	11.1	11	2.6	430	1,020
1Q13	6.6	5.6	–2.9	13	4.1	600	1,100

Notes:

1 Long Pond is an independent investment firm founded in May 1998 and has a single office in Seattle, WA. The firm manages portfolios in various equity, fixed income, and real estate strategies.

2 The composite has an inception date of 31 December 2001. A complete list and description of firm composites is available upon request.

(continued)

Exhibit 1 (Continued)

3 The composite includes all fee-paying discretionary, nontaxable portfolios that follow a mid-cap strategy. The composite does not include any non-fee-paying portfolios.

4 First Quarter 2013 (1Q13) data are not annualized.

5 Valuations are computed and performance reported in US$.

6 Internal dispersion is calculated using the equal-weighted standard deviation of all portfolios that were included in the composite for the entire year.

7 Gross-of-fees performance returns are presented before management and custodial fees but after all trading expenses. The management fee schedule is as follows: 1.00% on first US$25M; 0.60% thereafter. Net-of-fees performance returns are calculated by deducting the management fee of 0.25% from the monthly gross composite return.

Anton concludes by describing Long Pond's real estate composite valuation practices to Basco:

Since 1 January 2011, Long Pond uses fair value for real estate holdings calculated annually and have an external expert value the properties every 36 months. For periods before 1 January 2011 however, we used market values. We calculate income returns and capital returns separately using geometrically linked time-weighted rates of return and composite returns by asset-weighting the individual portfolio returns at least quarterly.

55 In her statement regarding input data, Basco is least likely correct with respect to:

A fair value.

B accrual accounting.

C settlement date accounting.

56 Which policy regarding return calculation methodology is least likely compliant with GIPS standards?

A Policy 1

B Policy 2

C Policy 3

57 With regard to Long Pond's procedures for composites, which of the following should most likely be modified in order to be compliant with GIPS standards? Composite:

A definition.

B construction.

C return calculations.

58 Based on Exhibit 1 and the notes following the table, Long Pond is least likely in compliance with GIPS standards with regard to the:

A length of performance record.

B measure of internal dispersion.

C presentation of 1Q13 performance.

59 Regarding the disclosures contained in Exhibit 1, GIPS standards would most likely:

A require Columns 3 and 7 and recommend Column 6.

B require Columns 2 and 5 and recommend Column 1.

C require Column 6 and recommend Columns 4 and 7.

60 In order for the real estate composite to be GIPS compliant, at a minimum, which of Long Pond's practices would most likely need to be modified?

A Frequency of valuations

B Rate-of-return calculations

C The use of fair and market values