2017 Level III Mock Exam PM

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.

Questions	Topic
1–6	Ethical and Professional Standards
7–12	Behavioral Finance
13–18	Private Wealth Management
19–24	Asset Allocation
25–30	Fixed Income Portfolio Management
31–36	Fixed Income Portfolio Management
37–42	Equity Portfolio Management
43–-48	Risk Management
49–54	Trading, Monitoring, Rebalancing
55–60	Performance Evaluation
Total:	**180**

2017 LEVEL III MOCK EXAM PM

Jorge Peña Case Scenario

Jorge Peña is a broker at Northwest Securities and a CFA Institute member who passed Levels I and II of the CFA® examination in 2011 and 2012, respectively. Because of a demanding work schedule, he did not enroll for the 2013 Level III exam. He hopes to enroll for the 2014 Level III exam.

In January 2013, Peña decides to apply for a broker position with Harvest Financial and updates his résumé (curriculum vitae). He prominently displays "CFA® candidate" on his resume and states, "I have completed both Level I and Level II of the Chartered Financial Analyst Program". Under the "Personal" section of his résumé, Peña lists "referee for regional football league for the past five years" and "a member of the investment committee at the Mueller School."

During an interview with Peter Williams, a partner at Harvest Financial, Pena is asked about his outside interests. Williams specifically asks about the referee position. Pena explains it is a significant time commitment on weekends, but he enjoys the activity and the fees of $50 per game more than pay for his travel expenses. Peña and Williams agree that $50 per game is not material.

They then discuss Peña's role on the investment committee of the Mueller School. The committee monitors and evaluates the performance of the school's asset managers and brokers, including Harvest. It is a volunteer position, but the school allows all volunteers free use of the school's athletic facilities. The School recently started charging non-students and faculty a membership fee of $500 per year to help recover their investment in new athletic equipment. Peña adds he has been told by the committee chair that he adds the most value to the committee. Peña and Williams agree his investment committee activities will not interfere with his duties at Harvest.

After lunch, Williams introduces Peña to a former colleague, Gabriella Martinez, who happens to be a client of Peña's current employer and who also attended the same university as Peña, although Peña did not graduate. Martinez asks, "In what area is your degree?" Peña replies, "I mostly studied finance. I found the coursework to be helpful preparation for the Chartered Financial Analyst program." Martinez then asks, "Why are you here?" Peña responds, "There are rumors Northwest is in trouble, which is why I want to leave. You should consider moving your account to Harvest."

One month later, Peña accepts an offer of employment from Harvest Financial and formally discloses to their Human Resources department his refereeing of football matches and that he sits on the Mueller School investment committee. On the first day in his new job, he hangs a framed copy of the CFA Institute Code of Ethics on his wall and places a copy of the *Standards of Practice Handbook* on his bookshelf for easy reference. Later that day, Peña uses public records to contact his clients as well Martinez. He informs them of his new position and asks them to transfer their accounts to Harvest so he can continue acting as their broker.

1 At Harvest, Peña attends an educational seminar about a new tax-advantaged investment program available for clients saving for college and university expenses. The program offers families the opportunity to obtain growth and distribution of earnings free from federal and state taxes. For the sake of simplicity, the Harvest supervisor advises Harvest employees to only provide clients information on a plan with federal tax benefits. He informs the brokers the plan is subject to the same compliance and suitability requirements that apply to the sale of non–tax advantaged products and offers similar commission structures as all other plans. The supervisor then distributes the paperwork associated with the plan along with the firm's compliance and suitability requirements.

When describing himself as a CFA® candidate on his resume (curriculum vitae) and listing the CFA exams he passed, did Peña violate any CFA Institute Standards of Professional Conduct?

A No.

B Yes, with regard to candidacy.

C Yes, with regard to completion level.

2 With respect to the fees he receives as a football referee, has Peña violated any CFA Institute Standards?

A No.

B Yes, he failed to receive written consent from his employer.

C Yes, he failed to receive written consent from all parties involved.

3 According to CFA Institute Standards, after commencing employment with Harvest, Peña is *least likely* to have violated which Standard with regard to his relationship with Mueller School?

A Misrepresentation.

B Conflicts of Interest.

C Additional Compensation.

4 During Peña 's conversation with Martinez, which of the following Standards is *least likely* to have been violated?

A Loyalty.

B Misrepresentation.

C Reference to the CFA Program.

5 Did Peña violate any CFA Institute Standards during his first month at Harvest?

A No.

B Yes, because he solicited clients from his previous employer.

C Yes, because he failed to inform his supervisor in writing of his obligation to comply with the Code and Standards.

6 Based on the information provided regarding the tax-advantaged savings plan, the Harvest supervisor is *least likely* to have violated the Standard relating to:

A Suitability.

B Independence and Objectivity.

C Responsibilities of Supervisors.

Philly Case Scenario

Meredith Yang, recently joined Philly Investment Advisors (Philly) located in downtown Philadelphia, USA. Philly is an investment advisory firm focused on managing the assets of high net worth individuals and small institutional clients. Derick Owen, is Yang's supervisor, a member of the firm's Investment Committee, and a senior member of Philly's Client Service team. Yang will be traveling with Owen to meet with the firm's clients and when possible she is expected to attend the firm's daily research meetings and quarterly investment meeting so that she can adequately communicate the firm's investment strategy.

Owen's next meeting is with George Bailey, an entrepreneur and self-made millionaire. Owen and Yang talk prior to the meeting and he makes the following observations: Bailey is independent, strong willed, quick to make decisions, and extremely confident. Historically his portfolio has had a high turnover rate and he has tended

to chase higher risk investments. He is also very "hands on." Bailey's youngest child is expected to graduate from university in the next couple of years and he has become increasingly more emotional about his investments. Yang questions if Owen has ever considered a behaviorally modified portfolio for Bailey, even though he demonstrates some of the shortcoming of classifying investors into personality types.

Owen and Yang have lunch with Richard Sloan, a new client, to discuss his Investment Policy Statement (IPS). Upon returning to the office, Yang writes up the following notes from their meeting and include Sloan's comments regarding why he has decided to change investment advisers:

Comment 1	Previous adviser solely focused on outperforming the S&P 500.
Comment 2	Previous adviser provided a consistent approach to managing their relationship.
Comment 3	Previous adviser did not understand him or his financial objectives.

Given Sloan's comments, Yang believes incorporating behavioral finance into his IPS will help to enhance the firm's relationship with him.

Owen and Yang meet with Callie Steven, an upper level executive with AutoPay, a small but fast growing privately held company. She has been employed with AutoPay for more than 15 years and as a result, her holdings in AutoPay are estimated to be more than 30% of her total portfolio. She believes that over the next several years AutoPay will put together an initial public offering, resulting in a huge windfall. She states that she has a significant portion of her portfolio in short-term bonds and money market funds to offset the risk of her AutoPay shares. Owen points out to Steven that her current portfolio is subject to mental accounting, is not constructed in layers, and does not take into consideration covariance between assets.

Amelia Montgomery, Philly's analyst responsible for covering the consumer discretionary sector, attended an investor briefing with the management team for Cole & Garn. Philly's investment committee is particularly interest in Cole & Garn since the stock is held in many of the portfolios they manage. Montgomery informs the committee that company management provided a favorable summary of the previous year and offered ambitious guidance for future earnings. She reminds the group that management is susceptible to behavioral biases and that they tend to be overconfident with an inclination to overestimate the likelihood of favorable outcomes. She felt that the best way to deal with management biases was to maintain a disciplined and systematic research approach. Remembering her days as a junior analyst, Yang cautioned that discounting management's comments and guidance could be problematic and detrimental to performance.

Philly's investment committee also met with their research analyst that covers the computer hardware industry to discuss the potential purchase of LTop Computers, a leading manufacturer of personal computer and tablets. Philly's research analyst presented his investment recommendation and upgraded his rating on the stock to buy from hold given LTop's new product introductions and an improved earnings outlook. During the discussion, committee chair Jackson Burke commented that he had suffered a major loss in LTop stock in the past so he would not be able to support buying the stock regardless of the improved outlook. There was little further discussion and the remaining committee members supported Burke's view.

Over the next week, Owen and Yang are scheduled to meet with Fillman Associates, Philly's largest institutional client. Owen mentions that Fillman is more sophisticated than Philly's typical client. To prepare for the meeting Yang reviews several of Fillman's annual due diligence forms completed by Owen. One question in particular catches her attention: it asked how the firm's equity portfolios performed during the 2005–2007 residential property boom and how the equity turnover rates varied from previous

years when the markets were more efficient. In part, the response read, "During the residential property boom of 2005–2007 equity trading activity was significantly higher than previous years when the markets were more efficient. Our trading expertise allowed us to consistently harvest profits."

7 Based on Owen's observations, which of the following would least likely limit the applicability of behavioral models to Bailey?

A Displaying characteristics of multiple investor types.

B Both cognitive and emotional biases.

C Behavioral changes as he ages.

8 Which of Sloan's comments from the lunch meeting *least likely* influenced Yang that a stronger bond could be developed, and to therefore include behavioral finance in his IPS?

A Comment 3.

B Comment 1.

C Comment 2.

9 Is Owen's comment regarding Steven's current portfolio correct?

A No, he is incorrect with regard to portfolio construction.

B Yes.

C No, he incorrect with regard to covariance between assets.

10 Who is *most likely* correct concerning how to deal with the ambitious earnings guidance and the behavioral biases of Cole & Gam's management team?

A Yang.

B Montgomery.

C Neither Montgomery nor Yang.

11 What behavioral bias *most likely* influenced the investment committee members to decide against the purchase of LTop stock?

A Loss Aversion.

B Overconfidence.

C Social Proof.

12 What behavioral bias is *most likely* indicated by Philly's equity turnover rates during the 2005–2007 residential boom?

A Herding.

B Overconfidence.

C Recency effect.

Sunnydale Case Scenario

Donna Everitt is a financial advisor at Mountainview Investment Counsel (MIC). Early Tuesday morning, she meets with a new client, Marjorie Sunnydale, to understand her financial history and objectives. Everitt mentions that she will be preparing an investment policy statement (IPS) for her. Marjorie says that one was prepared by her previous advisor, but that its purpose was not explained to her. The first question that Marjorie asks Everitt is what benefits an IPS might provide. Everitt prepares the following notes (Exhibit 1) as the meeting continues.

Exhibit 1 Notes from the Tuesday Meeting

Family Structure

Marjorie Sunnydale is a 59-year-old widow. Her husband, William, passed away two years ago. Their one child, Janice, died last year leaving a daughter, Anna, for whom Marjorie is the sole support. Anna's father is unknown, and Marjorie is in the process of legally adopting her. Anna is now 3 years old.

Family Assets

Solar Source Energy, Inc. (SSE)	Twenty years ago, Marjorie and William, both engineers, founded Solar Source Energy (SSE) after developing and patenting a method to produce spray-on solar cells. During the past twenty years they remained its sole owners and have grown it to become a major player in the do-it-yourself green energy movement. The SSE shares were independently appraised shortly before William's death at $10,000 each, with an estimated growth potential of 4% p.a. The company has never paid dividends. Marjorie inherited William's shares in SSE without immediate tax consequences, and any capital gains arising on these shares will be deferred until she disposes of them. She now owns all of the company's 1,000 outstanding shares, with an effective cost base for tax purposes of $0 per share.
The buyout offer for SSE shares	On the previous Friday, King Environmental (King) made a buyout offer for the immediate purchase of 30% of her shares at $11,000 per share with an option on the remainder at $13,000 per share in four years. Marjorie's current salary of $150,000 per year will continue for the next four years.
Other stock investments	Marjorie inherited 10,000 shares of Westmeyer stock (NYSE) from her mother. Her mother was a childhood friend of the company founder, and she pledged never to sell these shares. Marjorie plans on continuing to honor her mother's wishes. The shares are currently priced at $65 per share with a cost base of $5 per share for tax purposes.
Real estate	Marjorie intends on permanently keeping the home, which she and William built, in the family. It is worth $750,000 and carries no mortgage.
Cash	Marjorie has $200,000 in cash equivalents.

Immediate and Longer Term Goals

Living expenses	Marjorie's salary of $150,000 equals her current living expenses and are expected to remain constant over time.
Gifting	Prior to William's death, Marjorie and William planned on giving a $2 million donation to the engineering school from which they both had graduated. The gift was never made, but Marjorie wishes to complete the process within the next few months.
Educational funding	Marjorie has read that the annual cost of education at leading universities 15 years from now is estimated to be more than $150,000 per year. Accordingly, she would like to have $1.3 million available for Anna's education when she is 18. She plans on making four annual payments, starting immediately, into a savings fund that will be invested conservatively to earn 3% per annum to achieve the desired goal.
Retirement	Marjorie expects to retire in four years, at age 63, at which time she is entitled to a full (fixed) pension of $130,000 per year for as long as she lives. Alternatively, a reduced pension is available to her next year at the age of 60.
Support for Anna	As Anna's sole surviving family member, Marjorie wants to adequately provide for her support through at least age 35.

Health

Marjorie is in good health and expects to live to age 85, given her lifestyle and family history.

Exhibit 1 (Continued)

Tax Status and Inflation Expectations

Marjorie faces a 40% tax on all income and dividends, and a 25% tax on any capital gains. Everitt anticipates a long-run inflation rate of 1.5%.

After compiling the information in Exhibit 1, Everitt concludes that Marjorie has a low risk tolerance.

As they continued their Tuesday meeting, Marjorie asks Everitt to determine whether she will be able to fund her immediate goals if she accepts King's buyout offer.

Just prior to ending their Tuesday meeting, Marjorie mentions that three months ago she met with Gardiner-Parkway Advisors (GPA), and they prepared an IPS for her. She said that she was not satisfied with their work and this is why she has sought out assistance from MIC. She mentions the following three statements that were included in GPA's IPS:

- Marjorie has a multi-stage time horizon: the first stage is four years, until her intended retirement, followed by a second stage of 22 years;
- Marjorie intends to proceed with a planned donation to the engineering school from which she graduated, and there appears to be sufficient liquidity to meet this goal;
- Currently, the sizable investment in Westmeyer shares provides both tax deferral and tax reduction benefits

The Thursday afternoon phone call

On Thursday afternoon, Everitt phones Marjorie to ask her to return to the office to sign-off on the IPS which she had just prepared. Marjorie indicates that in the intervening few days several important developments have taken place that need to be incorporated into her IPS:

- Further negotiations with King resulted in her immediately accepting an offer of $13,000 per share for all of her shares in SSE.
- King agreed to maintain her $150,000 salary only for the rest of the current year during which the planned transition will be completed.
- Marjorie decided to accept a reduced pension of $100,000 per year, starting at age 60.
- The donation to the engineering school will now be increased to $3 million.
- Anna's education will now be funded immediately with a single contribution of $850,000 invested in the same way as the remainder of her portfolio.
- Marjorie plans on transferring the Westmeyer shares to Anna at age 21, either directly or through a trust set up in her will. In either case, Anna will be informed about her great-grandmother's wishes concerning the shares, with the hope that they will continue to be honored. Should Anna not survive to age 21, the shares will be donated to the engineering school.

Marjorie had indicated that she wished to have her investment portfolio structured to limit shortfall risk (defined as expected real return minus two standard deviations) to be no lower than a negative 12% in any one year. Before revising Marjorie's IPS for the new information, Everitt carries out additional research on expected future college costs and general inflation, and now estimates that Marjorie requires a real

after-tax return of 5% p.a. to meet her future needs. She provides summary statistics for three asset allocation alternatives (Exhibit 2) that she thinks will satisfy Marjorie's requirements.

Exhibit 2 Proposed Asset Allocation Alternatives

	1	2	3
Expected real-after tax return	7.4%	9.5%	6.3%
Expected annual standard deviation	12.5%	15.0%	9.0%
Sharpe ratio	0.35	0.43	0.37
Correlation with Westmeyer shares	0.23	0.19	0.45

13 Everitt's *least* accurate response to Marjorie's first question would be that it:

A summarizes the circumstances and constraints that govern the relationship between the advisor and client.

B ensures that both the advisor and underlying fund managers bear a duty of loyalty to the client.

C provides protection for both the advisor and client if management practices are subsequently questioned.

14 Everitt's conclusion about Marjorie's risk tolerance, after compiling Exhibit 1, is *most likely* based on her:

A level of wealth.

B source of wealth.

C stage of life.

15 If Marjorie accepts King's offer from the previous Friday for an immediate purchase of 30% of her shares, based on the information provided in Exhibit 1, the amount by which her current liquidity requirements will be exceeded is *closest* to:

A $907,000.

B $607,000.

C $457,000.

16 Based on Exhibit 1, which of the statements in the Gardiner-Parkway IPS prepared for Marjorie is *most* appropriate? The statement regarding:

A Her time horizon.

B the Westmeyer investment.

C the planned donation.

17 Based on the new information that Marjorie provides in the Thursday afternoon phone call, the inflation-adjusted, after tax return that she will require next year on her investable assets is *closest* to:

A 2.71%.

B 1.49%.

C 2.99%.

18 Based on Everitt's revised return requirements, the summary statistics in Exhibit 2, and Marjorie's stated preferences, which is the *most* appropriate asset allocation to meet her needs?

A 3

B 1
C 2

Mishum Case Scenario

Val Mishum is a senior manager at Stone Bancorp, Inc. She, and two of her colleagues, Peg Todd and Nat Filbert, have just joined the in-house pension investment committee which oversees the investment process for Stone's defined-benefit plan. As a team, they will help the investment committee measure overall return, consider benchmarks and evaluate outside investment managers. Todd initiates a discussion of the use of benchmarks applicable to various fund managers including hedge funds.

Todd: "We should match the passive and active managers with the appropriate security market index. Any benchmark or index we use should fit the specific needs of the sponsor (Stone Bancorp) rather than just the manager. Also, excluding the hedge funds, the indexes should be widely available."

Filbert: "An appropriate benchmark will have risks similar to that of an active manager's portfolio allowing us to better identify and reduce active risk exposure. If the benchmark and manager risk levels are aligned, we are indifferent whether positive excess returns are achieved by skill or by luck."

Mishum: "For active equity portfolios, we should at least be able to attribute returns to security selection or industry bets."

Mishum's team reviews report summaries of recent overall investment results of the pension plan account (Exhibit 1) and the performance of the equity managers (Exhibit 2). The account experienced significant cash flows only in April and December.

Exhibit 1 Stone Bancorp Pension Prior Calendar Year Investment Results

Date	Value in $ Millions	Large Cash Flows in $ Millions	
		Contribution	Distribution
January 1	248		
April 20	232		
April 21, after contribution	241	9	
December 31, after distributions	245		7

Using the data in Exhibit 1, Filbert calculates an overall annual return of –2.2% while Mishum calculates a return of –1.8% for the year. The team verifies the return calculations and discusses why they differ:

(continued)

Mishum: "When evaluating project returns with cash flows, I was taught to use the internal rate of return (IRR). It accounts for the cash flows yet is not influenced by their timing."

Filbert: "You have calculated the time-weighted rate of return (TWR), whereas I have calculated the money-weighted rate of return (MWR)."

Todd: "The money-weighted return should exceed the time-weighted return because the cash flows occurred at favorable times."

The team then considers the prior year's investment performance of the equity managers.

Exhibit 2 Active Equity Manager Performance for Prior Year

Active Manager	Style or Segment	Portfolio Return (%)	Benchmark Index	Benchmark Return (%)
Buck Growth	Large Cap Growth	7.3	S&P 500 Growth	6.9
Doe Value	Large Cap Value	9.7	S&P 500 Value	9.1
Fawn Small-Cap	Small Cap Blend	7.5	Russell 2000	7.4
	Market Index is the Wilshire 5000			8.2

After reviewing the equity manager data in Exhibit 2, Todd comments that he is most impressed with the manager whose active return was the highest for those whose investment style was out of favor over the period.

Six months later, Stone Bancorp announces a merger with another bank. When the deal closes, Stone will freeze and terminate the existing defined benefit pension plan. Employees will have access to a different plan with the new owner. The sponsor clarifies the pension obligations after these events as follows:

- No new employees will be added to the plan and existing vested employees will no longer accrue additional benefits.
- Current retired beneficiaries will continue to receive their normal flat, monthly payments. They do not have any option for a lump sum distribution.
- Due to expected terminations including certain highly compensated executives, lump-sum distributions within a year are estimated to be about 15% of the current plan value.
- The plan will be funded at 105% of ABO when terminated and no additional future contributions are expected.
- Actuaries identify the duration of estimated payouts excluding lump-sum distributions to be 14 years.
- The estimated return necessary to meet the obligations of the plan is 3.9%.

Mishum, Filbert, and Todd evaluate Stone's new situation and work toward setting up a new benchmark that will mimic the obligations and risk of the terminated plan going forward. The benchmark structure will drive the realignment of the investments.

Mishum: "We should design a benchmark that includes several bond funds, some inflation-sensitive securities, has a weighted average duration of 14 years, and sufficient liquidity to meet the lump sum payouts."

Todd: "I think we should identify a 3.9% required return as the primary objective since that estimate includes all of the expected payouts including inflation adjustments. We then select an assortment of asset classes that meet this required return while minimizing risk as much as possible."

Filbert: "Although you both make good points, the primary emphasis should be Sharpe style analysis. We should control investment risk using optimization procedures."

19 In the team's initial discussion of the use of benchmarks which of Todd's statements concerning indexes and benchmarks is *most* accurate? His statement regarding:

A the availability.

B active and passive managers.

C the needs of the sponsor.

20 In the team's initial discussion of benchmarks, which of the following statements concerning benchmarks for active managers is *most* accurate? The statement by:

A Filbert regarding active risk.

B Mishum.

C Filbert regarding skill or luck.

21 In the team's discussion of the overall rates of return calculated from Exhibit 1, the *most* accurate statement is made by:

A Filbert.

B Mishum.

C Todd.

22 Based on Exhibit 2, the manager that Todd is *most* impressed with is:

A Buck Growth.

B Doe Value.

C Fawn Small-Cap.

23 Following Stone's merger and the resultant changes in its pension plan, which team member *best* describes a returns-based benchmark?

A Todd

B Filbert

C Mishum

24 Following Stone's merger and the resultant changes to its pension plan, which team member describes the *most* appropriate new benchmark?

A Todd

B Mishum

C Filbert

Farro Case Scenario

Aina Farro and Aninda Kumar are portfolio managers at High Income Advisors, LLC (HIA), an institutional fixed income firm based in Portsmouth, NH. Farro and Kumar manage credit portfolios for clients that include pension funds and endowments. HIA has been selected as one of three finalists to potentially manage a credit portfolio for the Delmarva City pension fund. They are making a presentation to Delmarva"s investment committee, discussing HIA's investment process and trading strategies.

Farro begins the presentation by telling the investment committee that the firm's current macro view is the domestic economy is beginning to slow down given the sluggish global economic environment and, from a trading perspective, bid–ask spreads are widening.

She then begins to articulate HIA's broad capabilities in fixed income. She describes the firm's investment process using relative value as follows, "We employ a traditional portfolio construction process. Our approach is to use top-down analysis to drive asset allocation while the bottom-up component focuses on individual issuer and issue selection. Our goal with regard to relative value analysis is to identify the best values across spread sectors by ranking investments by sectors, structures, and issuers."

Nikki Winston, an investment committee member, asks Kumar to explain the various return measures contained in the presentation. Kumar responds, "In the context of a credit relative value framework, total return is often the goal of portfolio management and reflects gains and losses from both the movement of interest rates as well as the contraction and expansion of credit spreads. Excess returns refers to the credit component of total return without adjusting for the duration differential among asset classes. Relative value analysis is used to generate a ranking of expected returns during a future period of time. The analysis of expected returns is primarily focused on estimating future returns by de-composing historical patterns that are likely to recur."

Joao Gomes, another investment committee member, asks Farro, "I understand that with such low interest rates today, companies are still issuing new debt. Does this impact secondary trading?" Farro provides her view on the primary and secondary bond markets. She outlines three strategies HIA is currently employing:

Strategy 1:	From a tactical perspective, we are purchasing more new issues than normal since new issuance volume has declined but new issue spreads have increased.
Strategy 2:	Also as a tactical trade, we are selling existing holdings as we find liquidity from dealers, and using those funds to re-position the portfolio.
Strategy 3:	From a strategic perspective, we are seeing less issuance of structures such as bonds with puts and calls and higher issuance of medium-term-notes (MTNs). In our portfolios, we are buying more structures and holding off on purchases of MTNs.

Farro makes a statement regarding portfolio liquidity. "Our approach is to balance liquidity in the portfolio with the additional spread you get for holding less liquid issues. Since liquidity in the market varies over time, we monitor market conditions and position portfolios accordingly." Gomes points out, "We are unsure of our cash flow needs but may need to redeem some portion of this portfolio in the near term."

Gomes then asks, "What is the annual turnover in your portfolios and what is the current rationale for your secondary market trades that drive the turnover?" Farro responds, "On average our portfolios have an annual turnover rate of 40%. There are three trades we believe add alpha to the strategy." She describes the trades in more detail:

Trade 1:	Given our view that rates will rise, we prefer callable bonds to bullet maturities.
Trade 2:	Our credit analysts prefer the banking sector over the insurance sector. Despite both being financial institutions, banks will benefit more from rising rates.
Trade 3:	Credit analysis can uncover some excellent opportunities with BB-rated issuers that exhibit positive credit fundamentals.

Farro continues, "A relative-value trade we like to employ is a yield or spread pickup trade. In particular, we are analyzing certain private placements as well as BBB-rated credit securities available at higher yields than many holdings in our current portfolios. These bond swaps are expected to outperform in the portfolio."

25 Is Farro's description to the investment committee of traditional portfolio construction using relative value analysis *most likely* correct?

A Yes.

B No, she is incorrect with regards to approach.

C No, she is incorrect with regards to relative value analysis.

26 Which return measure that Kumar explains to Winston is *least likely* defined correctly?

A Total return

B Excess return

C Expected return

27 Given current market conditions, which strategy described by Farro to the investment committee, is *least likely* to have a favorable performance impact on HIA's portfolios?

A Strategy 3

B Strategy 2

C Strategy 1

28 Which is the *most likely* portfolio management implication for Farro given Gomes' comments about liquidity? She will:

A favor purchases of large corporate issues to private placements.

B require a smaller liquidity premium when buying large medium-term notes.

C ignore the liquidity premium for certain issues.

29 In order, the three trades that Farro describes can best be characterized as:

A structure, sector-rotation, and credit-upside trades.

B curve adjustment, credit-upside, and structure trades.

C structure, credit upside and credit defense trades.

30 Under what conditions would the yield pickup trade Farro describes, *least likely* achieve her intended objective for the portfolio? When:

A the sector targeted for buying securities is undergoing significant credit rating upgrades.

B leading economic indicators point toward signs of a turnaround.

C real GDP begins to decline and the Fed loosens monetary policy.

Kingsbridge Case Scenario

London-based Kingsbridge Partners has been selected to manage a GBP150 million global bond portfolio for a pension fund. Jonathan Bixby, CFA, Kingsbridge's portfolio manager, meets with Iain Seymour, CFA, a fixed income analyst at the firm to review the portfolio and its holdings relative to the client's objectives.

The pension fund allows the use of 100% leverage to generate incremental returns. Bixby evaluates the use of leverage in the portfolio using the data in Exhibit 1.

Exhibit 1

	Assets	Liabilities
Portfolio (GBP millions)	300	150
Duration	5.50	1.00
Expected Return or Cost (%)	4.75	3.95

Bixby's current macro view is that the economy is growing at a rate above the trend rate and, as a result, interest rates are likely to rise. Given his view, he is concerned the duration of the portfolio is inappropriate and plans to use the futures market to manage its interest rate risk. His new duration target for the asset portfolio is 4.25, and he uses the data in Exhibit 2 to reposition the portfolio.

Exhibit 2 Futures Market Data

Futures Contract Price	GBP100,500
Conversion Factor	1.12
Duration of Cheapest to Deliver Bond	5.3
Price of Cheapest to Deliver Bond	GBP97,750

Seymour suggests to Bixby that as an alternative to futures he could use interest rate swaps or options to alter the portfolio's duration. He says he can alter the duration by receiving fixed and paying floating on a swap. Seymour also suggests that buying a protective put will achieve the hedging objective but provides more upside if Bixby is wrong about the future direction of interest rates. He says Bixby can also express his view by writing a covered call and not incur the cost of the premium.

Seymour tells Bixby, "International interest rates are not perfectly correlated. We can see the impact of a change in US interest rates on our model global bond portfolio. This portfolio contains US and German bonds and is not currently hedged with regard to currency or interest rates. Our analysis shows that the country beta between the United States and Germany is 0.62." Model global bond portfolio data is provided in Exhibit 3.

Exhibit 3 Global Bond Model Portfolio

	Duration	Allocation (%)
US Bond Issuers	6.6	60
German Bond Issuers	3.9	40

Bixby asks Seymour whether the model portfolio should be hedged back to its domestic currency, the pound sterling (GBP). Bixby tells him that actively managing currency risk is an expected source of incremental returns for the portfolio and has historically accounted for 25% of Kingsbridge's alpha relative to the benchmark.

Seymour refers to the data in Exhibit 4 to support his current view that currency exposure in the portfolio should be actively managed.

Exhibit 4 Currency Market Data

	United States	Eurozone	United Kingdom
Risk free rate – One Year	0.25%	1.50%	0.90%
Spot rate (GBP per USD or EUR)	0.6098	0.8929	—
Forward rate (GBP per USD or EUR)	0.6137	0.8875	—
Kingsbridge forecast spot rate in 1 year	0.6173	0.8850	—

Bixby asks whether this global portfolio would benefit from including emerging market debt securities. Seymour responds that returns can be attractive in emerging markets during certain periods, but risks also abound. He notes the following risks:

Risk 1: Returns are frequently characterized by significant negative skewness because the potential large downside is not offset by a comparable upside.

Risk 2: Emerging markets offer less protection from interference by the executive branch than developed countries.

Risk 3: Emerging market countries have limited access to secondary sources of liquidity.

31 Based on the data in Exhibit 1, the duration of equity in the leveraged portfolio is closest to:

A 4.50.

B 5.00.

C 10.00.

32 Given Bixby's new target duration and the data in Exhibits 1 and 2, the most appropriate action using Treasury futures is to sell:

A 646 contracts.

B 789 contracts.

C 811 contracts.

33 Which of Seymour's comments regarding alternative ways to alter the portfolio's duration is most likely correct? The comment regarding:

A interest rate swaps.

B a protective put.

C the covered call.

34 Based on Seymour's statement regarding international interest rates, as well as the data in Exhibit 3, the impact of a 100-basis-point decline in US interest rates on the model portfolio's value is closest to:

A 3.41%.

B 4.02%.

C 4.93%.

35 Based on the data in Exhibit 4, the most likely action that Kingsbridge would take to actively manage the portfolio's currency exposure in the currency forward markets is to sell:

A USD and buy EUR.

B EUR and buy USD.

C USD, sell EUR, and buy GBP.

36 Seymour is least likely correct with respect to which risk regarding investing in emerging market debt?

A Risk 3

B Risk 2

C Risk 1

Sonera Endowment Fund Case Scenario

William Gatchell, CFA, is an investment analyst with the Sonera Endowment Fund. Sonera is considering hiring a new equity investment manager. In preparation, Gatchell meets with Anjou Lafite, another analyst at the fund, to review a relevant part of the endowment's investment policy statement:

"Funds will be invested in the most efficient vehicle that meets the investment objective. Each manager must demonstrate the efficiency with which the tracking error they take on delivers active return. In addition, each manager must consistently adhere to his stated style."

Gatchell is given the task of reviewing three investment managers and selecting a manager that is most likely to adhere to Sonera's investment policy statement. Information about the investment managers is found in Exhibit 1.

Exhibit 1 Investment Manager Data

	Investment Manager		
	A	**B**	**C**
Assets under management ($ millions)	1,325	3,912	524
Information ratio	–0.27	0.50	0.75
Small-cap value index– beta	0.95	0.98	1.05
Small-cap growth index– beta	0.32	0.43	0.48
Large-cap value index – beta	1.05	1.10	0.96
Large-cap growth index – beta	0.47	0.39	0.37
Manager stated style	Value	Value	Growth
Manager stated sub-style	Low P/E	High yield	Momentum

Gatchell is reviewing the fee structures proposed by the three investment managers. He finds the following reference in the investment policy statement:

"The fee structure must be easy to understand and avoid undue complexity wherever possible. Also, the fee structure must be predictable, so Sonera can reasonably forecast these costs on a yearly basis as an input to the annual budgeting process."

He understands there are many different fee structures, and he wants to make sure he chooses the most appropriate one for the Sonera Endowment Fund. He prepares a recommendation to the investment policy committee regarding the most appropriate fee structure.

Sonera has followed an active investment style for many years. Gatchell would like to recommend to the investment policy committee that a portion of the funds be invested using a passive investment style. His research shows there are a number of methods used to weight the stocks in an index, each having its own characteristics. The one key feature he feels is important is that the method chosen not be biased towards small-capitalization stocks.

Gatchell is also examining different ways to establish passive equity exposure. He states to Lafite, "There are a number of ways to get passive equity exposure; we can invest in an equity index mutual fund, a stock index futures contract, or a total return equity swap. Stock index futures and equity swaps are low-cost alternatives to equity index mutual funds; however, a drawback of stock index futures is they have to be rolled over periodically. One advantage of investing in equity mutual funds is that shares can be redeemed at any point during the trading day."

Gatchell is reviewing the performance of another investment manager, Far North, which employs a value-oriented approach and specializes in the Canadian market. Gatchell would like to recommend to the investment policy committee that the fund diversify geographically. The information for Far North and the related returns are found in Exhibit 2.

Exhibit 2 Far North: Return Information

	Rate of Return
Far North	14%
True active return	–1%
Misfit active return	5%

The investment policy committee reviews the information in Exhibit 2 and is not familiar with the terms true active return and misfit active return. Gatchell responds with the following statement:

"The true active return is the return Far North made above its normal benchmark return. The misfit active return is the return Far North made above the investor's benchmark return. The term investor's benchmark refers to the benchmark the investor uses to evaluate performance for a given portfolio or asset class."

37 Based on Exhibit 1, which investment manager *most likely* meets the criteria established in the endowment's investment policy statement?

A Manager A

B Manager B

C Manager C

38 Based on Exhibit 1, is there sufficient information for Gatchell to create and interpret the results of a style box?

A Yes

B No, because additional index data are required

C No, because additional holdings data are required

39 Which fee structure is *most* appropriate for Sonera based on the criteria in the investment policy statement?

A An ad valorem fee structure

B A performance-based fee structure with a fee cap

C A performance-based fee structure with a high water mark

40 If the investment policy committee decides to accept Gatchell's recommendation to also use passive investing, the index structure that *least likely* meets Gatchell's requirement is:

A a price-weighted index.

B a value-weighted index.

C an equal-weighted index.

41 In his statement to Lafite, Gatchell is *least likely* correct with respect to:

A cost.

B redemption.

C periodic rollover.

42 Is Gatchell's statement regarding true active return and misfit active return correct?

A Yes

B No, he is incorrect about true active return

C No, he is incorrect about misfit active return

Karin Larsson Case Scenario

Karin Larsson is a new employee in the risk management group at Baltic Investment Management, Inc. She is replacing Sten Reinfeldt, who has agreed to help her transition into her new role. Reinfeldt explains that risk governance refers to the process of setting risk management policies and standards for an organization, enabling firms to establish appropriate ranges for exposures and to emphasize individual risk factors within a centralized type of enterprise risk management.

Baltic manages proprietary investment strategies, which creates risk exposures for the firm. Larsson explains that these risks are both financial and nonfinancial in nature and proceeds to list several specific sources of risk:

Risk 1: Model Risk

Risk 2: Liquidity Risk

Risk 3: Settlement Risk

Baltic uses value at risk (VaR) as a probability-based measure of loss potential for its fixed income strategies. Reinfeldt states that the VaR for the fixed-income strategy is SEK10 million over any 5-day time period with a probability of 5 percent. Larsson asks Reinfeldt to estimate the fixed-income strategy's VaR at given levels of probability for specified time periods.

Baltic manages an equity strategy in addition to the fixed-income strategy. The trading desks for each strategy are each granted risk budgets that consider the allocation of both capital and daily VaR. The correlation between the equity desk and the fixed-income desk is low. Risk-budgeting data for both desks are provided in Exhibit 1.

Exhibit 1 Trading Desk Data (SEK million)

	Equity Desk	Fixed-Income Desk
Capital	200	100
Daily VaR	10	10
Monthly Profit	25	15

Reinfeldt comments that the risk management group has adopted stress testing to complement VaR analysis given some of its limitations. He lists several of the limitations of VaR for Larsson:

Limitation 1: VaR inaccurately measures risk exposure because it overestimates the magnitude and frequency of the worst returns.

Limitation 2: VaR incompletely measures risk exposure because it does not incorporate positive results into its risk profile.

Limitation 3: VaR incorrectly measures risk exposure because there are limited calculation methods and they often yield similar outcomes.

Larsson is concerned about credit exposure within the fixed-income strategy and asks Reinfeldt how Baltic manages this risk. Reinfeldt responds, "There are a number of ways we manage credit risk. First, we utilize credit derivatives in order to transfer credit risk. Second, we mark-to-market our credit derivatives in order to post collateral whenever a credit derivative's value is positive to Baltic and negative to the swap counterparty."

43 Which element of Reinfeldt's explanation about risk governance is *least likely* correct?

A Ranges for exposures

B Individual risk factors

C Risk management policies

44 Which risk listed by Reinfeldt is *most likely* a source of financial risk?

A Risk 1

B Risk 2

C Risk 3

45 Given Reinfeldt's estimate of VaR for the fixed-income strategy, which of the following statements is *most likely* accurate? Over a 5-day period, there is a:

A 5% probability the portfolio will lose at least SEK10 million.

B 95% probability the portfolio will lose at least SEK10 million.

C 5% probability the portfolio will lose no more than SEK10 million.

46 With regard to the fixed-income and equity trading desks, based on Exhibit 1, which of the following statements is *most likely* accurate?

A The trading desks have the same risk budget.

B The combined daily VaR of the trading desks is less than SEK20 million.

C The fixed-income desk generates better returns on its allocated capital given its VaR.

47 Which of the limitations of VaR analysis given by Reinfeldt is *most likely* correct?

A Limitation 1

B Limitation 2

C Limitation 3

48 Is Reinfeldt's statement regarding credit derivatives *most likely* correct?

A Yes.

B No, he is incorrect about marking to market.

C No, he is incorrect about transferring credit risk.

Ahmed Case Scenario

Nadia Ahmed is the head trader for Tweed Asset Management (Tweed) based in London, England. She is reviewing some of the trade requests the desk has received from its personal and institutional portfolio managers and is deciding on what tactics to recommend.

Ahmed starts by reviewing the trade requests from one of Tweed's personal portfolio managers, Edwin Moore. She passes the requests along to Vladimir Norsk, one of the firm's traders. The first trade Ahmed asks Norsk to execute is a purchase of 2,000 shares of BDF Ltd., which trades on the SEAQ, London's dealer market for infrequently traded shares. Norsk reviews the current limit order book for BDF shown in Exhibit 1.

Exhibit 1 Limit Order Book for BDF at 11:15:08

Bid			Ask		
Dealer	**Price**	**Size**	**Dealer**	**Price**	**Size**
C	£15.42	800	**B**	£15.48	1,800
B	£15.38	2,000	**A**	£15.50	1,000
A	£15.36	500	**C**	£15.52	600

Norsk was able to fill the order for BDF during the day by executing the trades shown in Exhibit 2.

Exhibit 2 Execution of BDF Purchase

Time of Trade	Trade Size	Trade Price	Ask Price	Ask Size	Bid Price	Bid Size
11:15:09	1,500	£15.46	£15.48	1,500	£15.38	2,000
12:20:30	500	£15.50	£15.50	1,000	£15.36	500

The next request that Ahmed reviews is for the purchase of 300,000 shares of WWT pie from a client who is quite concerned about price execution. She reviews the trading volumes from the previous day (Exhibit 3) and, prepares her recommendation on the trade.

Exhibit 3 Selected Trading Information London Stock Exchange

Stock	Average Daily Volume (ADV)	Previous Day Price History		
		High	Low	Close
WWT	450,000	£12.50	£12.43	£12.48
JAK	2,000,000	£25.80	£24.20	£ 25.50

The final order from Moore that Ahmed asks Norsk to execute is a purchase of 1,000 shares of JAK pie with a limit order of £25.00 good for the day.

Norsk was unsuccessful in filling the limit order on the first day and after consultation with the client they agree to revise the price. Two days later Norsk successfully purchases 800 shares of JAK at £26.25 with commission costs of £135.00. Moore decides to cancel the order for the remaining 200 shares when the shares close that day at £26.75.

Moore and Ahmed discuss the implementation shortfall from the investment in JAK, based on the $25.50 closing price in Exhibit 3, and Moore makes the following statement:

> I know that market movement is a factor in the implementation shortfall. Because market movement is beyond Norsk's control, when assessing his performance, we should adjust the calculation to only include the commission costs and the missed trading opportunity for the 200 shares.

49 The share-volume-weighted effective spread for the purchases of BDF is *closest* to:

A £0.10.

B £0.08.

C £0.04.

50 Using the information in Exhibits 1 and 2, which of the following statements about the execution of the trade for BDF is *most* accurate?

A The price movement for the first trade resulted in an effective spread higher than the quoted spread.

B The trader should have been able to fill the order completely with Dealer B.

C The price movement for the first trade was favorable for Tweed's trader.

51 The strategy Ahmed will *most likely* recommend in executing the purchase order for WWT is a(n):

A principal trade.

B market on open order.

C iceberg order.

52 The implementation shortfall, in basis points, on the purchase of the JAK shares is *closest* to:

A 360.

B 386.

C 332.

53 Moore's statement about assessing the trader's performance is *best* described as:

A incorrect, as only commission costs should be included.

B correct.

C incorrect, as delay costs should also be included.

54 Which of the three trades reviewed by Ahmed would *best* be handled via direct market access? The trade concerning:

A JAK

B WWT

C BDF

Baker Case Scenario

Kate Baker is in charge of assessing investment managers hired by KTB Funds. KTB states its investment strategy as being adept at investing in undervalued securities in equity and debt markets. Baker is assisted by Trent Coates and Gerry Manders. The group are examining the performance (Exhibit 1) of three managers who separately specialize in large-cap, mid-cap, and small-cap equities.

In addition to overall return, Baker reminds the group that they also need to focus on whether the managers have been consistent with KTB's investment strategy.

Exhibit 1 Equity Manager Return Performance (%)

	Large-Cap Portfolio	Mid-Cap Portfolio	Small-Cap Portfolio
Portfolio ex-post return	4.81	5.12	3.29
Benchmark ex-post return	3.35	5.08	6.13
Pure sector allocation return	1.52	0.12	0.27
Within-sector selection return	0.10	–0.01	0.05
Interaction return	–0.16	–0.07	–3.16

Given the under-performance of the small-cap fund, Baker and her assistants examine the investments being made in that fund. The fund holdings are primarily in stocks that trade infrequently and seldom have dealer quotes. Consequently, there is a concern that the small-cap benchmark may be inappropriate.

Coates suggests using a custom security-based benchmark that has the following criteria:

1 broadly representative of the small-cap market,

2 includes a cash position weighting, and

3 weighted according to the market capitalization of infrequently traded small cap stocks.

Baker and her assistants then turn their attention to the large-cap manager's performance. The large-cap benchmark is viewed as being representative of the market portfolio that is used in the Capital Asset Pricing Model (CAPM). Upon gathering more information (Exhibit 2), they want to assess whether the large-cap manager is skillful based on the generation of ex-post alpha relative to the CAPM and having a ratio of active return relative to active risk being above 0.10.

Exhibit 2 Large-Cap Portfolio Analysis

	Ex-Post Return (%)	Return Volatility (%)	CAPM Beta
Portfolio	4.81	44.2	1.2
Benchmark	3.35	25.4	1.0
Risk-free security	0.65	0.0	0.0

Notes: The volatility of the difference between the portfolio and benchmark returns is 0.32. Return volatility is equivalent to return standard deviation.

Manders suggests using a performance quality control chart to assess the large-cap manager. He makes the following statements to support his point:

- such a chart utilizes a confidence band that widens with the time horizon.
- a skillful manager only needs to outperform the benchmark regularly with deviation within the confidence band.
- the analysis is based on three criteria: 1) an initial testable null hypothesis that the manager has no investment skill, 2) an assumption that value-added returns are normally distributed and independent from period to period, and 3) an assumption that the manager's investment process is consistent from period to period.

The group now turns its attention to three bond funds in which KTB holds positions (Exhibit 3). Similar to KTB's equity strategy, the bond strategy is one of being adept at finding undervalued debt securities.

Exhibit 3 Bond Fund Return Performance (%)

	TQZ Bond Fund	MKK Bond Fund	BCM Bond Fund	Benchmark
Interest rate effect	0.95	0.95	0.95	0.95
Duration	0.42	0.02	0.62	0.00
Convexity	0.16	0.01	–0.15	0.00
Yield-curve shape change	–0.07	–0.01	–0.10	0.00
Sector/quality	0.01	0.16	0.23	0.00
Bond selectivity	–0.02	0.57	0.25	0.00
Transaction costs	0.00	0.00	0.00	0.00
Trading activity	0.07	0.10	0.17	0.00
Total return	1.52	1.80	1.97	0.95

Coates asks Baker. "Given all of the assessment we are performing on equity and bond managers, what are the consequences of firing a manager?"

Baker answers, "The expense of frequent manager turnover is only of concern if we commit Type 2 errors. However, we should also be concerned with discontinuing the services of skillful managers solely based on our quantitative assessment metrics,

which is an example of a Type I error. Consequently, in addition to quantitative assessment, we should also interview the fund manager face-to-face before either deciding to retain or terminate him or her, just as was done at the initial hire."

55 In assessing the equity manager's performance relative to KTB's investment strategy, the metric that is *most* useful is:

A with-in sector selection return.

B pure sector allocation return.

C the excess return of the portfolio over its benchmark.

56 The *most* appropriate criteria suggested by Coates for a custom security-based benchmark for the small-cap fund is:

A 1.

B 2.

C 3.

57 Based on the information in Exhibit 2 and the criteria for active return, which of the following measures *most likely* indicates that the large-cap manager is skillful?

A Sharpe ratio

B Treynor measure

C Information ratio

58 Manders' *most* accurate statement in regard to a performance quality control chart is the:

A three criteria necessary for analysis.

B description of the confidence band through time.

C skillful manager performance relative to the confidence band.

59 Based on Exhibit 3, the bond fund that is *most* consistent with KTB's investment strategy is:

A TQZ.

B MKK.

C BCM.

60 The *most* accurate part of Baker's answer to Coates' question about the consequences of firing a manager is the portion related to:

A interviewing the fund manager.

B the expense associated with manager turnover.

C the description of a Type I error.