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CFA Level I 2nd Mock Exam
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Revision 1

FinQuiz.com – 2nd Mock Exam 2015 (AM Session)

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Questions 1 through 18 relate to Ethical and Professional Standards

1. Lance Theodore is a portfolio manager at Trescott Alliance. Theodore always ensures he maintains regular communication with his clients. For the current quarter Theodore has utilized $10 million of client funds to purchase high-risk, illiquid, but high return emerging equities. The purchase was made for the accounts of risk-averse clients who do not have an imminent or foreseeable need for portfolio funds. During a conversation with a fellow manager, Theodore stated, ‘I am presently studying the characteristics of emerging market equities as this is my first time in dealing with the asset class.’ Theodore posts information about the recent equity purchase on Trescott Alliance’s website without mentioning which client accounts the purchase was made for and identifies himself as Trescott’s ‘emerging market specialist’.

   Theodore is in violation of the CFA Institute Standards of Professional Conduct because:

   A. he has misrepresented information on the firm’s website.
   B. the investment is unsuitable given his client’s risk tolerance.
   C. he does not have sufficient experience in dealing with emerging market equities.

   Correct Answer: A

   Reference:
   CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS b

   Theodore is in violation of CFA Standards of Professional Conduct concerning misrepresentation. This is because he has misrepresented his expertise with respect to emerging market equities.

   The investment is suitable for the client accounts in question; this is because risk-averse clients will be adequately compensated for the risk they are assuming in the form of higher expected returns. Additionally, these clients do not have urgent or near-term liquidity needs and so making illiquid investments is acceptable.

   Theodore is studying emerging market equities for making portfolio decisions; therefore, his lack of experience does not imply a violation of the Standards of Professional Conduct.

2. Howard Chance is an equity analyst at Lockwood & Jill, a research firm. He is building a return forecasting model which will predict the returns of stocks in volatile equity markets. Chance has created his model using methodology developed by his subordinate, Sasha Walters. Walters derives her methodology using historical stock returns in the requisite emerging markets. Historical returns are simulated and future economic and political factors are incorporated to build a forecasting equation. In the company's newsletter, Walters identifies Chance as one of the model's designers and specifies that historical equity returns were used to build the model.

   Which of the following CFA Institute Standards of Professional Conduct have been violated?

   A. Performance presentation
   B. Independence and objectivity
   C. Diligence and reasonable basis

   Correct Answer: A

   Reference: CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS b

   The standard relating to performance presentation has been violated; this is because Walters has simulated historical returns and has failed to disclose this fact in the company's newsletter. In this way, Walters has misrepresented facts.

   The standard relating to independence and objectivity has not been violated as there is no evidence of either individual's independence and/or objectivity being compromised.

3. According to the Standards of Professional Conduct, a responsible supervisor:

   A. may delegate their supervisory duties to their subordinates to distribute their work load.
   B. should deal with any employee regulatory violation by reporting it up the chain of command.
   C. does not bear the responsibility of enforcing policies related to non-investment-related activities.

   Correct Answer: A

Reference:
CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS c

According to the CFA Institute Standards of Professional Conduct, responsible supervisors are permitted to delegate supervisory duties to their subordinates; however this does not relieve them of their responsibilities.

Furthermore, supervisors should enforce policies related to both investment- and non-investment-related activities equally; this will assist in creating a strong ethical work environment.

When an employee has violated a law or regulation, it is not sufficient to report the incident up the chain of command. Responsible supervisors are required to take steps to ensure the violation will not be repeated. This is achieved by placing limits on the employee's activities or increasing the monitoring of employee's activities.

4. On January 1, 2013 Rictor Associates opened a new branch in Argentina. In the past, the firm has always operated from its US headquarters. Mark Watson has been assigned as the chief investment officer of the new branch. Watson requests Mary Jacob, the U.S. chief investment officer, to shift ten client accounts to the Argentinean division whereby all trades will be directed to a local broker which charges a low commission fee and has a historical record of achieving above-average portfolio returns. Jacob transfers the accounts without informing firm clients but implies that clients should expect Rictor to generate its best account performance in the coming months. Six months later, the accounts generate substantial portfolio losses due to a nationwide economic crisis.

   Which individual is *least likely* in violation of the CFA Institute Standards of Professional Conduct?

   A. Jacob; because she has made an implicit performance guarantee.
   B. Jacob; because she has transferred accounts without informing clients.
   C. Watson; because the brokerage arrangement did not deliver the expected performance.

   Correct Answer: C

Reference:
CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS b.

Jacob is in violation of the CFA Standards of Professional Conduct concerning misrepresentation. This is because she has made an implicit performance guarantee. The standard prohibits members and candidates from making performance guarantees.

Jacob is further in violation of the standard relating to communication with clients and prospects. This is because she has not disclosed information which may be important to investment analysis, recommendations or actions. Transferring the account to an overseas branch will increase foreign exchange risk and, in the specific case of Argentina, foreign exchange risk; clients are required to be notified of the change in risk exposure.

Watson is not in violation of the CFA Institute Standards of Professional Conduct regardless of the fact that the brokerage did not deliver the expected performance; he could not have anticipated the extent of the economic crisis on client account performance and so expecting him to do so is unreasonable.

5. A fund manager has fulfilled his duty of loyalty, prudence and care with respect to client accounts if he:

   A. seeks client approval prior to making investment decisions.
   B. has considered individual investor risk and return requirements when managing funds to a stated mandate.
   C. directs trades to a broker with a suboptimal performance record following a client’s written statement instructing him not to seek best execution.

Correct Answer: C

Reference:
CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS c

Based on Standard III (A), Loyalty, Prudence and Care, managers will be required to identify their actual investment client. However when managing funds to an index or mandate, beneficiaries and actual clients do not exist. In this scenario, the fund manager has to invest in a manner consistent with the stated mandate. The decisions of the fund manager do not have to be based on the individual investor's requirements and risk profile.

The fund manager is only required to seek client approval when in doubt about a particular course of action with respect to a client's account.

Members are required to following a client's instructions of directing trades to a broker delivering suboptimal performance as long as they receive a written statement from the client stating that they are not to seek best price and execution and that the client is aware of the impact of the decision on his/her account.

6. An investment manager uses nonmaterial nonpublic information combined with material public information as the basis for recommendations and decisions.

   Is this practice considered a violation of the CFA Institute Standards of Professional Conduct?

   A. No.
   B. Yes, if obtained from an analyst conference call.
   C. Yes, if the information is obtained through contacts with corporate insiders.

Correct Answer: A

Reference:
CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS b

Based on the CFA Institute Standards of Professional Conduct an investment manager is not considered in violation should he choose to use nonmaterial nonpublic information to make investment decisions even if the information is obtained from sources such as corporate insiders or analyst conference calls. This is known as the mosaic theory.

7. CFA Institute Standards of Professional Conduct require members and candidates to maintain their independence and objectivity by:

   A. disclosing the receipt of any gift which compromises their independence.
   B. placing the protection of market integrity prior to that of employer's interests.
   C. disclosing potential conflicts of interest when undertaking issuer paid research.

   Correct Answer: C

   Reference:
   CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS c

   In order to comply with the CFA Institute Standards of Professional Conduct members and candidates are required to maintain their independence and objectivity by disclosing potential conflicts of interest when engaging in issuer paid research. Such research may be fraught with potential conflicts as investors may believe the research is from an independent source when in fact it is paid by the subject company.

   The requirement to place market integrity above employer's interests is required by the standard concerning loyalty to employers.

   In order to maintain their independence and objectivity, members and candidates are recommended to reject gifts that have the potential to compromise their independence and objectivity.

8. A firm possessing material nonpublic information should *most likely* consider:

   A. prohibiting proprietary activity.
   B. prohibiting employees from engaging in personal trades.
   C. placing securities on a restricted list and distributing the list to firm employees.

   Correct Answer: B

   Reference:
   CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS c

Out of the options listed, prohibiting employees from engaging in personal trades is plausible. Prohibiting proprietary trading when a firm possesses material, nonpublic information may be counterproductive to maintaining the confidentiality of the market and market liquidity.
Placing securities on a restricted list and distributing the list often triggers the sort of trading the list was developed to avoid.

9. Joyce Richards operates from the South African branch of a portfolio management firm headquartered in Brazil. Along with managing domestic (South African) client accounts, Richards manages the accounts of offshore Brazilian clients. Local Brazilian laws permit investment managers to undertake portfolio trades twenty minutes after disseminating an investment recommendation. On the contrary South African laws prohibit investment managers from undertaking personal trades on stocks for which an investment recommendation is made regardless of when the trade is conducted.

In order to comply with the CFA Institute Standards of Professional Conduct, with respect to undertaking personal trades for which an investment recommendation is made, Richards is required to:

A. avoid undertaking personal trades.
B. wait for a minimum of twenty minutes after making recommendations.
C. wait for a maximum of twenty minutes after making recommendations.

Correct Answer: A

Reference:
CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS c

Standard I (A), Knowledge of the Law requires members and candidates to comply with the more strict of the applicable law or Code and Standards. Given that South Africa's laws concerning personal trading are more strict relative to Brazil's and the Codes and Standards, Richards must seek to avoid personal trades for which an investment recommendation is made.

The Code and Standards requires that personal trades be placed secondary to client trades. Clearly, South African laws are stricter in this regard.

10. Leslie Uga is a senior portfolio manager at Westgate who represents the firm at investment conferences. During an investment conference Naomi Walsh, a guest speaker, makes an announcement inviting attendees to make donations to a charitable cause run by her. At the conclusion of the conference Uga converses with Walsh, ‘One of my clients has earmarked portfolio funds for donating to a charitable cause. If you would like, I can arrange for a meeting for you with my client.’ Uga takes care not to reveal the identity of the client or the amount of funds set aside for donation.

Is Uga in violation of the CFA Institute Standards concerning Preservation of Client Confidentiality?

A. No.
B. Yes; by revealing her client’s intentions.
C. Yes; by offering to arrange a meeting with her client.

Correct Answer: B

Reference:
CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS b

Walsh is in violation of the standard concerning preservation of client confidentiality regardless of the fact that she has not revealed the identity of the client or the amount of funds set aside for donation. The standard concerning client confidentiality requires members and candidates to keep information communicated by clients confidential. Information concerning the client’s intentions is considered confidential information which the member or candidate has obtained as a result of his or her abilities to manage the client’s business.

11. Anne Miguel is AM Associates' equity fund manager, a European portfolio management firm. She manages the accounts of 25 high net worth clients with significant allocations to Latin American and domestic equities. This year several of her clients have requested for an allocation to North American equities. Lacking expertise in the requested securities, she contacts her friend Dan Harrison, a leading North American equity specialist and delegates the responsibility of managing the new securities to Harrison. In a recent report on client account performance, Miguel solely discloses the overall portfolio performance providing a breakdown of all constituent security returns.

Miguel is *most likely* in violation of the CFA Institute Standards of Professional Conduct concerning:

A. Fair Dealing
B. Conflicts of interest
C. Diligence and reasonable basis

Correct Answer: B

Reference:
CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS b

By failing to disclose her personal relationship with Harrison, Miguel is in violation of the standard concerning conflicts of interest. Disclosure of the conflict will allow the firm and clients to judge whether the relationship may have influenced her decision to delegate the responsibility of managing North American equities to Harrison.

The standard concerning fair dealing requires members and candidates to deal fairly with all clients when making investment recommendations or taking investment actions. There is no evidence of client accounts being dealt with unfairly.

The standard concerning diligence and reasonable basis has not been violated as the accounts have been transferred to a renowned expert in the region.

12. Rosa Lee is a futures trader serving a derivatives dealership firm. During her employment period she receives an employment offer from a competing firm which offers the position of senior futures trader as well as funding for a professional study program; the second offer is conditional upon accepting the first. She declines both offers stating that following the resignation of the firm's senior futures trader is a vacancy and that there are significant chances of her being promoted to the position. She does not disclose the competitor's offer to her employer.

Is Lee in violation of the standard concerning employer loyalty?

A. No.
B. Yes, by sharing information concerning the vacant position.
C. Yes, by not disclosing the details of the offer to her employer.

Correct Answer: B

Reference:
CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS b

Lee is in violation of the standard concerning employer loyalty by divulging confidential information concerning the employer. The vacancy of a senior position is a sensitive matter and disclosing the information may be harmful to the employer's interests. The standard requires members and candidates to act for the benefit of their employer by not divulging confidential information.

By choosing not to disclose the offer to her employer, Lee is not in violation of the standard. This is because she has not accepted or considered accepting the offer.

13. The senior compliance officer at Trinity Associates is developing a compliance policy for his firm, which aims to strengthen the firm's adherence to the CFA Institute's Standards of Professional Conduct. Of particular interest to the officer are the standards concerning transaction priority and client communication. The officer includes a brief description of both standards in the firm's manual.

Priority of Transactions: Ensuring client account transactions are given priority is essential and should supersede transactions undertaken for beneficial and fee-paying family member accounts.

Communication with Clients and Prospects: When communicating with clients and prospects, members and candidates should ensure that any limitation of statistically developed projections are identified. Failing to do so may result in violation.

With respect to his descriptions of the two standards, the officer is *most likely*:

A. correct.
B. incorrect regarding his description of priority of transactions.
C. incorrect regarding his description of communication with clients and prospects.

Correct Answer: B

Reference:
CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS b

The officer is incorrect with respect to his description of the standard concerning priority of transactions. The standard requires members and candidates to place client transactions ahead of transactions undertaken for their employer or personal financial interests. Transactions undertaken for family member accounts which pay the standard fee should be treated as regular fee-paying clients and should not be disadvantaged.

The officer is correct with respect to his description of the standard relating to client communication. In their communication with clients and prospects, the standards require members and candidates to use reasonable judgment in identifying which factors are important to their investment analyses, recommendations, or actions and include those factors in the communications with clients and prospective clients. When using quantitative analysis techniques, it is important for the member or candidate to identify the limitations of the analysis.

Failing to identify the limitations of statistically developed projections may be construed as a violation as it leaves readers unaware of the limitations of the projections.

14. To address the conflicts of interests created by personal investing, recommended procedures for compliance *most likely* include:

    A. public disclosure of personal holdings.
    B. total trading ban for a large portfolio management firm.
    C. making a disclosure to the client stating, “investment personnel are subject to personal trading policies.”

Correct Answer: B

Reference:
CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS c

In order to avoid conflicts of interest created by personal investing, recommended procedures for compliance include:

- establishing blackout/restricted periods prior to trades undertaken for clients; the severity of the restriction depends on the size of the firm amongst other factors. For larger firms, a blackout requirement can include a total trading ban.
- disclosing the holdings (to the employer) in which the employee has a beneficial interest; this disclosure should be made at the commencement of employment and annually thereafter. Public disclosure is not a recommended compliance procedure.
- Fully disclosing to clients their firm's policies and procedures regarding personal investing upon request. These disclosures should be useful and care should be taken to avoid general disclosures such as "investment personnel are subject to personal trading policies."

15. Which of the following record retention practices are in compliance with the CFA Institute Standards of Professional Conduct?

    A. A firm maintains only electronic copies of records.
    B. Given that no regulatory requirements exist, records are kept for a period of five years.
    C. Departing employees use historical recommendations prepared at their former employer ensuring they recall any information used in the analysis solely from memory.

Correct Answer: A

Reference:
CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS c

Records can be maintained in electronic or hard copy form or both. The standards do not impose any restriction in this regard.

The CFA Institute requires members and candidates to maintain records for a minimum period of seven years in the absence of regulatory requirements.

Departing employees are not permitted to use investment recommendations or research reports prepared at their previous employer because the supporting documentation is unavailable. They must re-create supporting documents using new information collected from public sources or directly from the covered company. Recalling information from memory or from information obtained from the previous employer is not permitted.

16. A research analyst is writing a report on an automobile manufacturer. Based on his own analysis he has devised a buy recommendation for the manufacturer. When reviewing the research analyst's report, his supervisor requests a revision of the recommendation to 'sell'. The supervisor's request is based on a conversation he overhears between two company executives in the cafeteria of the manufacturer's premises. The executives discuss the company's unannounced decision to shut down a key division in the wake of substantial losses.

    The analyst's *best* course of action is to:

    A. revise the recommendation.
    B. request for a different assignment.
    C. issue the report using his recommendation but disclose the difference in opinion.

    Correct Answer: B

    Reference:
    CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS c.

Standard I (B), Independence and Objectivity, requires analysts to develop investment recommendations, which reflects their true opinions and is free from bias or internal or external pressures. Therefore changing the recommendation to sell will be construed a violation of the standard.

Between issuing the report using his opinion while disclosing the difference in opinion and requesting for a change in assignment, the best course of action is the latter. This is because the analyst's supervisor is asking him to revise his recommendation based on material nonpublic information (plans to shut down a key division). By disassociating himself from the activity, this action will be consistent with the guidance of Standard I (A), Knowledge of the Law.

17. A member of candidate violates the duty of loyalty to clients if (s) he:

   A. does not vote all proxies.
   B. relieves his duty to seek best execution with respect to client directed brokerage arrangements.
   C. fails to inform of a change in recommendation prior to accepting an order contrary to the recommendation.

Correct Answer: B

Reference:
CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS b

A member's duty to seek best execution is not relieved with respect to client directed brokerage arrangements despite an explicit statement from clients that they are not to seek best execution and that they are aware of the impact on their accounts.
A cost-benefit analysis may show that voting all proxies may not benefit the client and so voting all proxies may not be necessary in all instances.

Failing to inform clients of a change in recommendation prior to accepting an order, which is contrary to the recommendation, is considered a violation of the standard relating to fair dealing.

18. In addition to the standard relating to the preservation of client confidentiality, which of the following standards require the firm to adopt policies which ensure members and candidates preserve client confidentiality?

A. Suitability
B. Fair Dealing
C. Loyalty, prudence and care

Correct Answer: C

Reference:
CFA Level 1, Volume 1, Study Session 1, Reading 2, LOS c

The standard concerning loyalty, prudence and care requires the firm to adopt policies which ensure members and candidate preserve the confidentiality.

Questions 19 to 32 relate to Quantitative Methods

19. North Western Associates manages the portfolios of several private wealth clients. Martina Gayle is one of the firm's clients with a $600,000 investment portfolio. Gayle would like to liquidate $25,000 from her portfolio to fund her daughter's college education. She has expressly stated that any funds withdrawn should be generated from portfolio returns and the initial capital should not be utilized. Her portfolio manager has short-listed three portfolio alternatives for Gayle (exhibit).

Exhibit:
Portfolio Alternatives for Gayle (In Percent)

	A	B	C
Expected return	3.5	5.2	7.4
Standard Deviation	4.4	6.8	22.0

Based on the Gayle's preferences and the information provided in the Exhibit, the *most* suitable portfolio is:

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

Correct Answer: B

Reference:
CFA Level 1, Volume 1, Study Session 3, Reading 9, LOS n

The threshold return is $25,000/$600,000 = 0.04167 or 4.167%. Based on the three allocations identified, A is unsuitable as its expected return is lower than the threshold return. Between allocations B and C, the former is more suitable as it has a higher safety-first ratio (see below).

Safety first ratio (allocation B) = (5.2 – 4.167)/6.8 = 0.1519
Safety first ratio (allocation C) = (7.4 – 4.167)/22.0 = 0.1470

20. Marshall Hick is an equity analyst following the stock of Dover Inc. If Dover earns an EPS of $45.50, its share price is forecasted to rise by 4%. The probability of earning an EPS of $45.50 is 0.55 while the probability that the share price rises by 4% is 0.50. The probability of both events occurring is 0.45.

Using the above information, the probability that the share price rises by 4% given an EPS of $45.50 is earned is *closest* to:

A. 25%.
B. 60%.
C. 82%.

Correct Answer: C

Reference:
CFA Level 1, Volume 1, Study Session 2, Reading 8, LOS d

P (Price rises by 4%/EPS of $45.50 is earned) = P (Price rises by 4% and EPS of $45.50 is earned) ÷ P (EPS of $45.50 is earned)

P (Price rises by 4%/EPS of $45.50 is earned) = 0.45 ÷ 0.55 = 0.818 or 82%

21. The maturity premium *most likely*:

A. is insensitive to changes in market interest rates.
B. compensates investors for the risk of loss relative to an investment's fair value if the investment needs to be converted to cash quickly.
C. compensates investors for the increased sensitivity of the market value of debt to a change in market interest rates as maturity is extended.

Correct Answer: B

Reference:
CFA Level 1, Volume 1, Study Session 2, Reading 5, LOS b

The maturity premium compensates investors for the increased sensitivity of the market value of debt to a change in market interest rates as maturity is extended. All else equal, this premium should be higher for longer maturity debt.

22. Martin Edgar, a research analyst from the pharmaceutical industry, is performing statistical analysis in an attempt to determine the effectiveness of chamomile tea on patients suffering from anxiety. To perform his analysis, he has collected data on patients in the U.S. who have successfully used the tea to overcome anxiety. Using this data, he aims to derive a conclusion for such patients on a global scale, adjusting his analysis for each country's local and environmental factors.

    For the purposes of his analysis, Edgar is *most likely* using:

    A. differential statistics.
    B. descriptive statistics.
    C. statistical interference.

    Correct Answer: C

    Reference:
    CFA Level 1, Volume 1, Study Session 2, Reading 7, LOS a

    Edgar is using statistical interference; this is because he is making judgments about the global population of anxiety patients based on his survey conducted in one country.

23. A positively skewed distribution is characterized by:

    A. an equal median and mean.
    B. a mode greater than the mean.
    C. a median greater than the mode.

    Correct Answer: C

    Reference:
    CFA Level 1, Volume 1, Study Session 2, Reading 7, LOS j

    When a distribution is positively skewed, the mode is less than the median which is less than the mean.

24. Lukas Turner is an equity analyst conducting research on Norwegian small-cap stocks. He has collected average stock return data over the past five years sorted in ascending order. Turner will categorize the stocks in one of five calculated return intervals. The average return data is as follows:

- 10.5%, -7.4%, - 6.3%, 3.7%, 5.1%, 7.3%, 8.9%, 12.4%, and 13.0%

Which of the following statements *most* accurately illustrates a calculated return interval and the associated absolute frequency?

	Return Interval:	Absolute Frequency:
A.	- 10.5% ≤ observation ≤ - 6.3%	3
B.	- 10.5% ≤ observation ≤ - 5.8%	3
C.	- 5.5% ≤ observation ≤ - 0.5%	0

Correct Answer: B

Reference:
CFA Level 1, Volume 1, Study Session 2, Reading 7, LOS c

The minimum observation is – 10.5% and the maximum observation is 13.0% and so the range is + 13.0% - (- 10.5%) = 23.5%. Since k = 5, the interval width is 23.5%/5 = 4.7%.

The endpoints of the first two intervals are:
- 10.5% + 4.7% = - 5.8%
- 5.8% + 4.7% = - 1.1%

The first interval ranges from – 10.5% to – 5.8% and there are three observations falling in this interval (- 10.5%, - 7.4%, and – 6.3%).

25. A binomial random variable:

A. has one of two possible outcomes.
B. is defined by a probability density function.
C. is completely described by three parameters.

Correct Answer: A

Reference:
CFA Level 1, Volume 1, Study Session 2, Reading 9, LOS e

The binomial random variable has two possible outcomes, success or failure. The variable is completely described by two parameters, n (number of trials) and p (probability of success).

26. Greenich, a supplier of timber to the furniture industry, maintains a diversified investment portfolio. The supplier's management has expressly stated that existing investments should be screened for potential losses. Any asset class held in the portfolio should be removed if not profitable (average expected return ≤ 0%) thirty days following purchase. Mark Gibbons, Greenich's chief investment officer, has collected forecast and statistical data for an equity investment held in the portfolio. Gibbons is using a 5% significance level.

Exhibit: Forecast Data for Greenich's Equity Investment

Expected return	8.2%
Standard deviation of expected return	4.5%
t-critical value (one-tailed)	1.699
t-critical value (two-tailed)	2.045

Upon conducting hypothesis testing Gibbons removes the equity investment from the portfolio. Based on the data collected and statistical analysis performed, Gibbons has *most likely*:

A. committed a Type I error.
B. committed a Type II error.
C. adequately rejected a false null hypothesis.

Correct Answer: A

Reference:
CFA Level 1, Volume 1, Study Session 3, Reading 11, LOS c

The null hypothesis is that the equity investment achieves an average expected return which less than or equal to 0% and is thus unprofitable. Therefore, the null hypothesis is $H_0 : \mu \leq 0$ and the alternative hypothesis is $H_a : \mu > 0$. This is a one-tailed test and thus a critical value of 1.699 should be used. The calculated t-statistic is 1.8222 [(8.2% - 0%)/4.5%].

Since the calculated t-statistic is greater than the critical value, the null hypothesis should be rejected in favor of the alternative hypothesis and the investment should not be removed; that is, the null hypothesis is false (expected returns will be greater than 0%). By failing to reject the null hypothesis and removing the investment from the portfolio, Gibbons has committed a Type I error.

27. Carla Mathews is a portfolio manager at Horizon Associates, a wealth management firm. She is managing the portfolios of two clients, Janet Wilson and Eliza Homer. The expected return and standard deviation of the two clients' portfolios is summarized in the exhibit. The threshold return for both investors is 1.5%.

Exhibit: Portfolio Expected Return and Standard Deviation (%)

	Wilson	Homer
Expected Return	8.9	7.5
Expected Standard Deviation	7.3	6.0

The probability that their portfolio returns will be less than 1.5% is respectively *closest* to:

	Wilson	Homer
A.	0.1562	0.1587.
B.	0.8438	0.8413.
C.	1.0137	1.0000.

Correct Answer: A

Reference:
CFA Level 1, Volume 1, Study Session 3, Reading 9, LOS n

The safety first ratio for Wilson's portfolio is 1.0137 [(8.9 – 1.5)/7.3] while the ratio for Homer's portfolio is 1.0000 [(7.5 – 1.5)/6.0]. The probability that Wilson's portfolio return will fall below the threshold return, P (1.01), is 0.1562 (1 – 0.8438) while the probability for Homer's portfolio P (1.00) is 0.1587 (1 – 0.8413).

28. Alexis Morgan, CFA, is a stock analyst at Walsh Associates, an asset management firm. She is forecasting the performance of a technology stock held in several client portfolios based on historical data. The share price rose in three of the previous four quarters. The underlying probability of an increase in price is 0.65.

Based on the data collected and using a Bernoulli trial, the probability that the stock price will rise in three or fewer quarters is *closest* to:

A. 3.1%.
B. 27.5%.
C. 42.2%.

Correct Answer: A

Reference:
CFA Level 1, Volume 1, Study Session 3, Reading 9, LOS f

p (x) =

$$\binom{n}{x} p^x (1-p)^{n-x} = \frac{n!}{(n-x)!x!} p^x (1-p)^{n-x} = \frac{4!}{(4-3)!3!}(0.65)^4 (1-0.65)^3 = 0.0306$$

29. Kyla Cox, a portfolio manager serving WestTime, is managing an equity index fund that is benchmarked to the S&P500 equity index. WestTime's performance appraisal manager expects Cox to keep tracking error within a band of 60 basis points (bps) of the benchmark's return, on a quarterly basis. WestTime will be satisfied with Cox if she stays within the 60 bps band 80% of the time.

The probability that tracking error is within the band in two or fewer quarters is *closest* to:

A. 3%
B. 18%
C. 79%.

Correct Answer: B

Reference:
CFA Level 1, Volume 1, Study Session 3, Reading 9, LOS h

With n = 4 and p = 0.80, the probability is F (2) = p (2) + p (1) + p (0)

P (2) = $(4!/2!2!)(0.80)^2(0.20)^2 = 0.1536$

P (1) = $(4!/1!3!)(0.80)^1(0.20)^3 = 0.0256$

P (0) = $(4!/0!4!)(0.80)^0(0.20^4) = 0.00016$

0.1536 + 0.0256 + 0.00016 = 0.17936

30. Trisha Dawson is an independent equity analyst. She is attempting to determine how a new government regulation relevant to the software industry will influence the market price of industry players' shares of stock. Due to a lack of availability, Dawson collects historical industry data analyzing the impact of government regulation on the share market price of companies currently in existence. Based on her analysis Dawson purchases the stocks of those companies, which are forecasted to rise in price in response to the regulation.

Is Dawson's analysis subject to sampling bias?

A. No.
B. Yes, data mining bias.
C. Yes, sample selection bias.

Correct Answer: C

Reference:
CFA Level 1, Volume 1, Study Session 3, Reading 10, LOS k

Dawson's analysis is subject to sample selection bias. This is because she is relying solely on historical information for companies, which are currently in existence to conduct her analysis. Due to the lack of data availability, she excludes current information in addition to data relevant to industry players no longer in existence. Her sampling process suffers from sample selection and survivorship bias.

31. When sampling from a normal distribution, a t-test may be used to compute the reliability factor if the variance and sample size is respectively:

	variance:	sample size:
A.	unknown	large.
B.	Known	small.
C.	Known	large.

Correct Answer: A

Reference:
CFA Level 1, Volume 1, Study Session 3, Reading 10, LOS j

When sampling from a normal distribution, the t-test may be used to compute the reliability factor if the variance is unknown and the sample size is either large or small.
When sampling from a normal distribution, the z-test may be used to compute the reliability factor if the:

- variance is known and sample size is either large or small or
- variance is unknown and sample size is large.

32. In contrast to simple random sampling, stratified random sampling:

A. generates a higher sampling error.
B. produces more accurate estimates of parameters.
C. does not ensure that the population subdivisions of interest are represented in the sample.

Correct Answer: B

Reference:
CFA Level 1, Volume 1, Study Session 3, Reading 10, LOS c

In contrast to simple random sampling, stratified random sampling ensures that the population subdivisions of interest are represented. In addition, the sampling error is relatively lower in the case of stratified random sampling as it produces more accurate parameter estimates.

Question 33 to 44 relate to Economics

33. Farah Ali is a British investor seeking to redeem her $1 million investment in U.S. corporate bonds. Ali's investment advisor has collected relevant exchange and interest rate data in an exhibit.

Exhibit: Exchange and Interest Rate Data

Current USD/GBP spot rate	1.6715
3-month USD/GBP forward rate	1.8500
Annualized 3-month British risk-free rate (%)	1.5000
Annualized 3-month U.S. risk-free rate (%)	2.0000

Ali's investment advisor proposes she take advantage of the difference in risk-free rates by investing the redemption proceeds at the U.S. risk-free rate for three months and then convert the sum back to the GBP at the no-arbitrage forward rate at the end of the period.

Based on the data in the exhibit, the proposed investment strategy will generate an un-annualized domestic investment return for Ali of:

A. 0.37%.
B. 0.50%.
C. 1.50%.

Correct Answer: A

Reference:
CFA Level 1, Volume 2, Study Session 6, Reading 21, LOS f

The no-arbitrage relationship does not hold since the current forward rate does not equal the rate implied by the no-arbitrage relationship (see below).

No-arbitrage forward rate ($F_{USD/GBP}$) = 1.6715 × [1 + (2.0% × 3/12)]/[1 + (1.5% × 3/12)]

= 1.6736

Based on the advisor's proposed strategy, $1 million will be worth $1,005,000 in three months time:

$1 million × [1 + (0.02 × 3/12)] = $1,005,000

Converting these back into GBP at the pre-specified, no-arbitrage, contract, rate (1.6736) will generate proceeds of GBP 600,501.91 ($1,005,000/1.6736). Given that the original GBP value of the investment is 598,265.03 ($1,000,000/1.6715) the domestic investment return is 0.374% [(600,501.91/598,265.03) – 1].

34. Which of the following adjustments is *most likely* required when calculating personal income from national income?

A. Add household income
B. Subtract statistical discrepancies
C. Subtract undistributed corporate profits

Correct Answer: C

Reference:
CFA Level 1, Volume 2, Study Session 5, Reading 17, LOS d

Personal income = National income
- Indirect business taxes
- Corporate income taxes
- Undistributed corporate profits
+ Transfer payments

35. According to the quantity theory of money, holding all else constant, an increase in:

A. the demand for real money is an increasing function of real income.
B. the demand for real money is an increasing function of interest rate.
C. real income must be accompanied by a decrease in real interest rate.

Correct Answer: A

Reference:
CFA Level 1, Volume 2, Study Session 5, Reading 17, LOS f

According to the quantity theory of money, the demand for real money varies directly with real income. As individuals' incomes rise, their demand for bank deposits (money balances) increases.

On the other hand, the demand for real money varies inversely with interest rates. Individuals seek to invest their money in higher yielding securities when interest rates increase. In order to achieve equilibrium in the money market real money supply, M/P, should have a positive relationship between real interest rates (r) and real income (Y). In other words, M/P = M (r, Y). This equation implies a positive relationship between real income (Y) and real interest rate (r).

36. A consumption basket in a developing country comprises of four categories of goods. For each good Kyle Smith has summarized data concerning quantity consumed and price. The price index in January 2011 was 89.

Time	January 2011		February 2011	
Goods	Quantity	Price	Quantity	Price
Bread	20 kg	\$2.9/kg	20 kg	\$2.6/kg
Milk	40 liters	\$1.5/liter	35 liters	\$1.4/liter
Gasoline	65 liters	\$90/liter	62 liters	\$85/liter
Potatoes	50 kg	\$1.8/kg	50 kg	\$1.8/kg

Based on the data provided, the inflation rate for the period under analysis is *closest* to:

A. – 98.8%.
B. – 9.9%
C. + 1.3%.

Correct Answer: C

Reference:
CFA Level 1, Volume 2, Study Session 5, Reading 18, LOS f

Total value of consumption basket (February 2011)
= (20 × 2.6) + (35 × 1.4) + (62 × 85) + (50 × 1.8)
= $5,461

Total value of consumption basket (January 2011)
= (20 × 2.9) + (40 × 1.5) + (65 × 90) + (50 × 1.8)
= $6,058

Price index in February 2011 ($5,461/$6,058) × 100 = $90.15
Inflation rate = 90.15/89 – 1 = 0.0129 = 1.2868% or 1.3%

37. Risa is a developing country situated in Southeast Asia. Labor statistics for the years 2012 and 2013 are summarized in the exhibit below by Lisa Mascot, an economic analyst. Mascot aims to estimate the sustainable growth rate of Risa over the time period under analysis.

Exhibit:
Labor Statistics Concerning Risa

	2012	2013
Long-term labor productivity growth rate (%)	1.5	2.4
Aggregate hours worked (in millions)	7,500	8,100
Long-term growth rate of labor force (%)	5.3	4.9

The percentage change in Risa's rate of sustainable economic growth between 2012 and 2013 is *closest* to:

A. 7.35%.
B. 7.40%.
C. 15.94%.

Correct Answer: A

Reference:
CFA Level 1, Volume 2, Study Session 5, Reading 17, LOS l

Sustainable or potential growth rate =
Long-term growth rate of labor force + Long-term labor productivity growth rate

Sustainable growth rate (2012) = 1.5% + 5.3% = 6.8%
Sustainable growth rate (2013) = 2.4% + 4.9% = 7.3%

Percentage change in growth rate = 7.3%/6.8% - 1 = 7.35%

38. Rightway Inc. has reported an accounting profit and abnormal profit of $450,000 and $405,000 respectively, for the financial year 2013. The difference between abnormal and accounting profits is expected to widen over the long-term. The firm has a cost of capital equal to 10%.

Based on the data provided, which of the following conclusions is *most likely* correct? Rightway Inc. ('s):

A. market value of equity is unaffected by economic profit.
B. implicit opportunity costs are lower than economic profit.
C. ability to access capital is adversely impacted over the long run.

Correct Answer: B

Reference:
CFA Level 1, Volume 2, Study Session 4, Reading 15, LOS a

Implicit opportunity costs are lower than abnormal or economic profit (see below).

Implicit opportunity costs*	= Accounting profit – Economic profit
	= \$450,000 – \$405,000
	= \$45,000

*Normal profit is the level of accounting profit needed to cover implicit opportunity costs.

In general normal profit if required to stay in business in the long run while economic profit is not. Over the long-run Rightway Inc. is expected to make normal profit as accounting profit is higher than economic profit and expected to remain so.

Normal profit (loss)	= Accounting profit – Economic profit
	= \$450,000 – \$405,000
	= \$45,000

Since accounting profit is greater than normal profit, economic profit will be greater than zero and the firm will be able to protect economic profit in the long run. This will have a positive effect on the market value of shareholders' equity, which should increase. Furthermore, this will have a positive impact on the firm's ability to access capital and function properly as a business enterprise.

39. Which of the following costs can *least likely* be classified as being fixed in nature?

    A. Sunk costs
    B. Inventory costs
    C. Real estate lease payments

Correct Answer: B

Reference:
CFA Level 1, Volume 2, Study Session 4, Reading 15, LOS d

Fixed costs do not change with production levels. It can be a sunk or unavoidable costs or real estate lease payments. Inventory costs are classified as variable costs.

40. The exhibit below illustrates the production and cost schedule for Elta Corp, a manufacturer of diving equipment, during its first month of operations.

Exhibit: Elta Corp's Production and Cost Schedule

Quantity (Q)	Total fixed costs ($)	Average fixed cost ($)	Total variable cost ($)	Average variable cost ($)
5	45,000	9,000	32,100	6,420
6	53,320	8,867	35,580	5,930
7	62,250	8,893	40,500	5,786
8	70,500	8,813	55,780	6,973

Based on the data in the exhibit, which of the following conclusions is *most likely* appropriate?

A. The cost of producing an additional unit beyond the 6th is $13,850.
B. Elta's average total costs are minimized at a production level of 7 units.
C. Elta consumes a greater proportion of its production capacity for each unit produced beyond the 7th unit.

Correct Answer: C

Reference:
CFA Level 1, Volume 2, Study Session 4, Reading 15, LOS d

The minimum point on the average variable cost curve (AVC) in the case of Elta is at 7 units (VC = $5,786). Beyond this point cost increases as the firm utilizes more production capacity.
Marginal cost measures the cost of producing an additional unit. At 6 units, marginal cost is $11,800 ($53,320 + $35,580) – ($45,000 + $32,100) /(6 – 5).
Thus the cost of producing an additional unit beyond 6 units is $11,800.

The minimum point on the AVC is 7 units. However this level does not coincide with the lowest average variable costs and does not correspond to the least-cost quantity for average total cost.

41. When markets are in perfect competition economic profits are:

A. zero in the short and long run.
B. generated if price is greater than average total costs in the short run.
C. generated in the long run only if price is at the minimum efficient scale point on the long run average total cost curve.

Correct Answer: B

Reference:
CFA Level 1, Volume 2, Study Session 4, Reading 15, LOS h

When markets are in perfect competition economic profits are generated in the short run if price is greater than short run average total costs.

In the long run firms will operate at the minimum efficient scale point on its long-run average total cost curve. At this point, price to the firm will decline and economic profits will equal zero.

42. An oligopoly is characterized by:

A. high barriers to entry.
B. participating firms having no pricing power.
C. firms placing less importance to non-price competition.

Correct Answer: A

Reference:
CFA Level 1, Volume 2, Study Session 4, Reading 16, LOS a

An oligopoly is characterized by few sellers, a homogenous/standardized market structure, high barriers to entry, firms having some or considerable pricing power, and advertising and product differentiation being a key non-price competitive strategy.

43. A market analyst is comparing two products, A and B, sold by the food processing industry in an attempt to ascertain whether they are substitutes or complements. An individual consumer's monthly demand for product A is given by the equation $Q^d_A = 8 - 1.0P_A + 0.008I + 0.30P_B$, where Q^d_A equals the number of units of A demanded each month, I equals the monthly household income, P_A equals the price of product A, and P_B equals the price of product B. The price of product A is \$10.50, household income is \$3,500, and the price of product B is \$7.25.

The cross-price elasticity of the two products and the nature of the two products are *most likely*:

	cross-price elasticity:	nature:
A.	- 0.38	complements.
B.	+ 0.08	substitutes.
C.	+ 1.15	substitutes.

Correct Answer: B

Reference:
CFA Level 1, Volume 2, Study Session 4, Reading 13, LOS m

Cross-price elasticity of demand is given by the equation $(\Delta Q_A / \Delta P_B)(P_B / Q_A)$.

The quantity demanded for product A is calculated as follows:

$Q^d_A = 8 - 1.0(10.5) + 0.008(3{,}500) + 0.30(7.25) = 27.675$.

Based on the demand function, $\Delta Q_A / \Delta P_B = 0.30$.

Therefore, the cross-price elasticity of demand for product A is 0.078591 = (0.30)(7.25/27.675). Since the figure for cross price elasticity is positive, products A and B are substitutes.

44. The government of a particular country has required companies to increase worker safety in the electric component industry. This will increase the costs of production, which will be passed on to consumers in the form of higher selling prices. If there is no change in consumer income, the increase in selling prices will *most likely* cause:

   A. movement along the demand curve.
   B. cause the demand curve to shift upwards and to the right.
   C. cause the demand curve to shift downwards and to the left.

Correct Answer: A

Reference:
CFA Level 1, Volume 2, Study Session 4, Reading 13, LOS c

Only changes in the prices of goods will cause movements along the demand curve. Changes in any other variable such as household income will shift the entire demand curve.

Questions 45 to 68 relate to Financial Reporting and Analysis

45. A company's flexibility in taking advantage of business opportunities is measured by its:

    A. solvency.
    B. profitability.
    C. magnitude of operating cash flows.

    Correct Answer: C

    Reference:
    CFA Level 1, Volume 3, Study Session 7, Reading 22, LOS a

    A company's flexibility in funding needed investments and taking advantage of business opportunities is measured by the magnitude of positive operating cash flows.
    A company's ability to meet long-term obligations is referred to as solvency. The profitability of a company, although important, cannot help determine a company's flexibility.

46. Accounting accruals:

    A. do not take the timing of related cash movements into account.
    B. are required when the timing of cash movements and accounting recognition coincide.
    C. are required when the timing of cash movements and accounting recognition do not coincide.

    Correct Answer: C

    Reference:
    CFA Level 1, Volume 3, Study Session 7, Reading 23, LOS d

    Accrual accounting is required when cash movements are either prior or after accounting recognition; in other words, the timing of the two do not coincide.

    In order to determine whether accruals are required, the timing of cash movements needs to be compared to the timing of accounting recognition.

47. On September 1, 2013 a company prepaid \$40,500 for an item of machinery acquired for a one-year lease term. \$1,500 of the rental amount paid represented a refundable deposit to be repaid at the end of the lease term.

If the company's financial year concludes on December 31, 2013, the amount to be transferred from its balance sheet to income statement at year end is *closest* to:

A. \$3,250.
B. \$13,000.
C. \$13,500.

Correct Answer: B

Reference:
CFA Level 1, Volume 3, Study Session 7, Reading 23, LOS d

Monthly lease rental = (\$40,500 – \$1,500)/12 = \$3,250

On September 1, 2013:

Prepaid rent (asset) was increased by \$39,000 (\$40,500 - \$1,500)

Deposits (asset) was increased by \$1,500

On December 31, 2013 four months of the lease term have elapsed and the associated prepaid rent will be transferred to the income statement. Therefore, the amount transferred to rental expense will amount to \$13,000.

48. A supplier has received \$30,000 in cash from one of its customers for an electric component, which is to be delivered at the end of the month.

At the time of cash receipt, the supplier will record the revenue as:

A. realized.
B. unbilled.
C. deferred.

Correct Answer: C

Reference:
CFA Level 1, Volume 3, Study Session 7, Reading 23, LOS d

The supplier will record the amount received as deferred or unearned revenue, which represents cash received for revenue which is to be earned. The supplier will earn revenue when the component is delivered.

Both realized and accrued (or unbilled) revenue represent revenue which has been earned; the latter refers to revenue which has been earned but for which cash has not been received.

49. Which of the following transactions are included in other comprehensive income?

    A. Repurchasing shares from owners.
    B. Payment of dividends to common shareholders.
    C. Unrealized gains and losses on available for sale securities.

Correct Answer: C

Reference:
CFA Level 1, Volume 3, Study Session 8, Reading 25, LOS k

Other comprehensive income is defined as “the change in the equity [net assets] of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. It includes all changes in equity during a period except those resulting from investment by owners and distribution to owners.”

It includes, among other items, unrealized gains and losses on investment securities classified as available for sale. The payment of dividends classifies as distributions to owners and is typically excluded. Share repurchases reflect transactions with owners and are also typically excluded.

50. Skyline Limited reported $300,000 net income for the year ended June 30, 2013 and had a weighted average of 150,000 shares outstanding. At the beginning of the year, the company had 20,000 stock options outstanding with an exercise price of $40. The company's average market price averaged $50 per share. The company had no other dilutive security.

Skyline's diluted EPS using the treasury stock method is *closest* to:

A. 1.76.
B. 1.95.
C. 2.00.

Correct Answer: B

Reference:
CFA Level 1, Volume 3, Study Session 8, Reading 25, LOS g

The proceeds received by the company if all the stock options are exercised equal $800,000 ($40 × 20,000). The company will receive 20,000 shares upon exercise and the options would no longer be outstanding. Under the treasury stock method it is assumed that shares are repurchased using cash received upon option exercise. At the average market price of $50, and using the proceeds of $800,000 the company would have repurchased 16,000 shares ($800,000/$50).

Therefore, the incremental shares issued are 4,000 (20,000 – 16,000).
Diluted EPS (Numerator) = Net income **–** preferred dividends

Diluted EPS (Denominator) = [Weighted average number of shares outstanding] + (New shares that would have been issued at option exercise **–** Shares that would have been purchased with cash received upon exercise) × (Proportion of year during which the financial instruments were outstanding)]

Diluted EPS = $300,000/(150,000 + 4,000) = 1.948
Basic EPS = $300,000/$150,000 = 2.000

51. Miller Processing Inc. is a book publisher operating in the U.S. In the most recent financial year, one of Miller's production plants was completely destroyed by a factory fire. Total losses attributable to the incident amounted to $1.2 million. Miller complies with U.S. GAAP.

Miller Processing Inc. will account for the loss as:

A. an extraordinary item.
B. a discontinued operation.
C. part of its continuing operations.

Correct Answer: A

Reference:
CFA Level 1, Volume 3, Study Session 8, Reading 25, LOS e

The losses associated with a factory fire are classified as unusual in nature and infrequent in occurrence and thus are accounted for as an extraordinary item.

When a company disposes of or establishes a plan to dispose of one of its component operations and will have no further involvement in the operation, the income statement separately reports the effect of this disposal as a discontinued operation. The fire incident does not represent such an event.

Items that are either unusual in nature or infrequent in occurrence, but not both, are classified as part of continuing operations. However, the loss to Miller due to the factory fire is both unusual in nature and infrequent in occurrence and is thus classified net of tax below discontinued operations.

52. Recordia is a music production company operating in the U.S. The company intends to sell one of its operating divisions generating substantial losses for the company over the previous two years. The division is to be sold to another record producing company, which is paying a high price for the division, $15 million, due to its strategic fit. The carrying value of the division prior to sale is $12 million. The applicable tax rate is 30%. Recordia complies with U.S. GAAP.

    In its income statement, Recordia will record a transaction gain of:

    A. $3.0 million as part of operating profit.
    B. $2.1 million as part of discontinued operations.
    C. $2.1 million as a separate component below discontinued operations.

    Correct Answer: A

    Reference:
    CFA Level 1, Volume 3, Study Session 8, Reading 25, LOS e

    The gain generated from the sale of the operating division will be classified as an unusual or infrequent item, gross of tax, as part of its continuing operations (operating profit). This is because the sale of the operating division is an infrequent but not unusual event and is considered part of a company's ordinary business activities.

53. Ascillio Tech has a weighted average of 500,000 shares of common stock outstanding in 2013. Ascillio has $300,000 of 5% convertible bonds with each convertible into 4,000 shares. The company has reported net income of $750,000 while the applicable tax rate is 30%.

    Ascillio's diluted EPS is *closest* to:

    A. 1.05.
    B. 1.47.
    C. 1.50.

    Correct Answer: B

    Reference:
    CFA Level 1, Volume 3, Study Session 8, Reading 25, LOS g

Diluted EPS

$$= \frac{Net\ income + After - tax\ interest\ on\ convertible\ debt}{Weighetd\ Avg.\ no.of\ shares\ outstanding + Additional\ common\ shares\ that\ would\ have\ been\ issued\ on\ conversion}$$

$$= \frac{\$750{,}000 - [(5\% \times (1-0.3) \times \$300{,}000]}{500{,}000 + 4{,}000} = 1.4673$$

To determine whether the EPS is anti-dilutive, the dilutive EPS is compared with the basic EPS of 1.50 ($750,000/$500,000). Since diluted EPS is lower than basic EPS, the former earnings measure is not dilutive.

54. Which inventory accounting method will report the highest number of days of inventory on hand assuming rising inventory costs and units?

   A. FIFO
   B. LIFO
   C. Weighted average cost

Correct Answer: A

Reference:
CFA Level 1, Volume 3, Study Session 9, Reading 29, LOS e

The number of days of inventory on hand is calculated as 365 divided by the inventory turnover ratio; the latter is calculated as cost of sales divided by average inventory. The two measures are inversely related and thus a high number of days of inventory on hand translates into a low inventory turnover ratio. The inventory turnover ratio is lowest using the FIFO method since ending inventory (component of the denominator) comprises of newer, more expensive units while cost of goods sold (numerator) comprises of older, cheaper inventory. Therefore, the number of days of inventory on hand will be the highest under the FIFO method.

55. Assuming declining inventory costs, in contrast to the FIFO method of inventory accounting, LIFO will produce a lower:

   A. quick ratio.
   B. gross profit margin.
   C. debt-to-equity ratio.

Correct Answer: C

Reference:
CFA Level 1, Volume 3, Study Session 9, Reading 29, LOS e

Debt-to-equity ratio will be lower under LIFO as lower cost of sales (comprising of recent, cheaper units) will generate higher net income. Higher net income will increase retained earnings and thus equity.

Gross profit margin will be higher under LIFO as lower cost of sales enhances gross profit and thus the margin measure.

The quick ratio does not include the inventory balance and is thus not affected by the choice of inventory accounting method.

56. Under IFRS, disclosures required for property, plant and equipment *least likely* include:

A. useful lives.
B. residual values.
C. measurement bases.

Correct Answer: B

Reference:
CFA Level 1, Volume 3, Study Session 9, Reading 30, LOS j

Disclosures required by IFRS for property, plant and equipment includes useful lives and measurement bases among other disclosures. Estimated residual values are not required to be disclosed.

57. ENC Inc. is a biomedical research firm operating in the U.S. Allen Smith, the company's chief financial analyst, is attempting to ascertain the tax bases of two of the company's assets. Smith has enclosed details regarding the two assets below:

Research costs: The total amount of research costs expensed during the year amounted to \$450,000. Local tax authorities require companies to amortize research costs on a straight line basis over a four year term.

Accounts receivable: On its balance sheet ENC reported net accounts receivable of \$275,000. The expense related to uncollectible amounts reported in the income statement is equal to \$6,875. Local tax authorities allow 2.0% of the gross amount for uncollectible amounts.
With respect to the information provided on the two asset classes, the tax base of research costs and accounts receivable, respectively, is *closest* to:

	research costs:	accounts receivable:
A.	\$0	\$269,363.
B.	\$112,500	\$5,638.
C.	\$337,500	\$276,238.

Correct Answer: C

Reference:
CFA Level 1, Volume 3, Study Session 9, Reading 31, LOS c

Research costs: The tax authorities require amortization of the research costs and thus require capitalization. Therefore, the tax base of the asset amounts to \$337,500 [450,000 – (450,000/4)].

Accounts receivable: The amount of expense permitted by tax authorities with regard to uncollectible accounts receivable is equal to \$5,637.5 [(\$275,000 + 6,875) × 0.02]. Therefore the tax base of accounts receivable amounts to \$276,237.50 (\$275,000.0 + \$6,875 – \$5,637.5).

58. On January 1, 2013 Heather Corp expensed development costs of $250,000 in relation to a new line of equipment. Local tax authorities require capitalization and amortization of development costs on a straight line basis based on a four year term. In addition, the firm received $35,500 in revenue in advance from its customers. Tax authorities require unearned revenues to be recognized on a cash basis.

With respect to the two accounts mentioned above, which of the following statements is *most likely* correct?

A. A permanent taxable difference of ($35,500) will arise in relation to unearned revenues.
B. A deductible temporary difference of $62,500 will arise in relation to development costs.
C. A deferred tax asset of $187,500 will be recognized in relation to development costs.

Correct Answer: C

Reference:
CFA Level 1, Volume 3, Study Session 9, Reading 31, LOS f

The carrying amount of unearned revenues (liability) will equal to $35,500. Because these revenues have not been earned, they will not be recognized in the income statement until earned. As mentioned, since revenue received in advance is recognized in taxable income and thus taxed, the tax base is $35,500 – $35,500 = $0. The difference between the tax base and carrying amount of the unearned revenue account is a deductible temporary difference as an excess amount was paid for taxes which is expected to be recovered from future operations when revenues are recovered.

In relation to development costs, the carrying amount of the asset is $0 since development costs are expensed as incurred. The tax base of development costs is equal to $187,500 [$250,000 – ($250,000/4)]. A deferred tax asset of $187,500 ($0 – $187,500) will be recognized as the carrying amount of the asset is lower than the taxable base. The difference between the two amounts is a temporary difference, which is expected to be recovered from future operations.

59. The exhibit below highlights liquidity ratios for three competing manufacturing concerns (Alpha, Beta and Gamma) for the financial year 2013.

	Alpha	Beta	Gamma
Cash ratio	2.0	1.8	2.2
Defensive interval ratio	38	45	29
Quick ratio	1.9	1.9	1.5
Current ratio	1.0	0.5	0.7

Based on the information provided in the exhibit, which company is in the strongest position to continue to pay its expenses solely from its existing liquid assets?

A. Alpha
B. Beta
C. Gamma

Correct Answer: B
Reference:
CFA Level 1, Volume 3, Study Session 8, Reading 28, LOS b & c

The defensive interval ratio measures how long a company can continue to pay its expenses from existing liquid assets without relying on its operating cash inflows. Beta has the highest defensive interval ratio and is thus in the strongest position.

60. In a situation where a company's inventory becomes illiquid and experiences a decline in inventory turnover ratio, the quick ratio should *most likely*:

A. rise.
B. decline.
C. remain unchanged.

Correct Answer: C

Reference:
CFA Level 1, Volume 3, Study Session 8, Reading 28, LOS b

The quick ratio does not include the inventory balance in its numerator (see below). A change in the inventory account will not affect this ratio.

Quick ratio = (Cash + accounts receivable + marketable securities)/current liabilities

61. Throck is a manufacturer of home appliances. The company prepares and presents its financial statements in accordance with IFRS. The exhibit illustrates the classification of selective items in its cash flow statement.

Item	Cash Flow Statement Classification
Dividends paid	Operating
Dividends received	Investing
Interest paid	Financing
Interest received	Operating

Which of the following adjustments is *least likely* required when deriving free cash flows to the firm (FCFF) from cash flow from operations (CFO)? Add:

A. dividends paid.
B. interest received.
C. dividends received.

Correct Answer: B

Reference:
CFA Level 1, Volume 3, Study Session 8, Reading 27, LOS i

If interest received is placed in the investing section, this should be added back to CFO to determine FCFF. However since this income is classified as an operating activity, no further adjustment is necessary.

If dividends paid are subtracted in the operating section, these should be added back to compute FCFF.

If dividends received are place in the investing section, these should be added back to compute FCFF.

62. Which of the following will not be a component of a cash flow statement prepared using the indirect method?

A. Cash paid to suppliers.
B. Amortization of bond discount.
C. Gain from the sale of a long-term asset.

Correct Answer: A

Reference:
CFA Level 1, Volume 3, Study Session 8, Reading 27, LOS f

Both net income and amortization of bond discount are components of a cash flow statement prepared using the indirect method.

Cash paid to suppliers is a component of a cash flow statement prepared using the direct method.

63. Lark West, CFA, is a financial analyst comparing the financial results of two competitors in the agriculture sector, Rexus and Fields. He has collected selective information from the companies' financial statements to perform his analysis in the exhibit below:

Exhibit: Financial Information Relevant to Rexus and Fields

$ millions	Rexus	Fields
Operating profit	65	90
Interest expense	15	65
Operating expense	22	35
Accounts payable	120	450
Deferred tax liability	32	51
Lease payments	14	20
Short-term borrowings	15	41
Long-term notes payable	22	31
Equity	150	600
Assets	342	758

West will *most likely* conclude that:

A. Rexus has weaker solvency.
B. Rexus has greater financial risk as measured by its debt-to-assets ratio.
C. Fields has greater financial risk as measured by its debt-to-equity ratio.

Correct Answer: B

Reference:
CFA Level 1, Volume 3, Study Session 9, Reading 32, LOS l

All $ figures are in millions.

Debt-to-assets = Total debt/total assets
Debt-to-assets ratio (Rexus) = ($15 + $22)/$342 = 0.1082 or 10.82%
Debt-to-assets ratio (Fields) = ($41 + $31)/$758 = 0.0950 or 9.50%

Based on the debt-to-assets ratio, Rexus has greater financial risk.

Debt-to-equity = Total debt/total equity
Debt-to-equity (Rexus) = ($15 + $22)/$150 = 0.2467 or 24.67%
Debt-to-equity (Fields) = ($41 + $31)/$600 = 0.12 or 12.00%

Based on the debt-to-equity ratio, Rexus has greater financial risk.

Coverage ratios (measures of solvency) cannot be calculated in the absence of information on interest payments. Given that both companies hold interest-bearing debt, the companies must be making interest payments.

64. Which of the following conditions conducive to low quality financial reporting can result from pressure to meet some criteria for personal or corporate reasons?

A. Motivation
B. Opportunity.
C. Rationalization

Correct Answer: A

Reference:
CFA Level 1, Volume 3, Study Session 10, Reading 33, LOS e

Three conditions exist when low quality financial reports are issued:

Opportunity: can be the result of internal conditions, such as poor internal controls or an ineffective board of directors, or external conditions such as accounting standards that provide scope for divergent choices or minimal consequences for an inappropriate choice.

Motivation: can result from pressure to meet some criteria for personal reasons, such as a bonus, or corporate reasons such as concern about financing in the future.

Rationalization: If an individual is concerned about a choice, he or she needs to be able to him or herself.

65. The ability of a company to meet its short-term obligations is measured using:

A. activity ratios.
B. liquidity ratios.
C. solvency ratios.

Correct Answer: B

Reference:
CFA Level 1, Volume 3, Study Session 8, Reading 28, Pages 346, LOS b

Liquidity ratios measure a company's ability to meet short-term obligations. Activity ratios measure how efficiently a company manages its assets while solvency ratios measure the ability of a company to meet its long-term debt obligations.

66. Which of the following reasons are *most likely* attributable to a decline in the return-on-equity ratio?

A. A lower tax burden.
B. A decrease in borrowing costs.
C. The repurchase of common stock.

Correct Answer: A

Reference:
CFA Level 1, Volume 3, Study Session 7, Reading 28, LOS d

A lower tax burden implies a higher tax rate and that the company retains less of its pre-tax profits. This will contribute to a decline in return-on-equity.
A decrease in borrowing costs, or interest burden, should lead to an increase in return on equity.

The repurchase of common stock will decrease total equity (denominator) thereby increasing the reported measure.

67. The exhibit below illustrates selective financial measures for Aqua Corp. for the financial years 2012 and 2013.

Exhibit

	2013	2012
Return on equity	9.0%	10.5%
Tax burden	75.3%	70.8%
Interest burden	98.0%	99.0%
EBIT margin	7.7%	6.5%
Return on assets	4.5%	5.1%

Which of the following explanations *least likely* supports the decline in return on equity observed between 2012 and 2013? Aqua's:

A. liquidity has declined.
B. tax rate has increased.
C. solvency has declined.

Correct Answer: A

Reference:
CFA Level 1, Volume 3, Study Session 8, Reading 28, LOS d

There is no measure of liquidity provided in the exhibit.

Tax burden is measured as '1 – tax rate'. The tax burden has decreased which suggests that the tax rate has increased and the company will retain less of its pre-tax profits. This would contribute to a decline in return on equity measure.

Aqua has reduced its degree of financial leverage (or solvency, see below). A decline in financial leverage will contribute towards a decline in ROE.
ROE = Return on assets × Financial leverage

Financial leverage (2012) = 0.105/0.051 = 2.06
Financial leverage (2013) = 0.09/0.045 = 2.00

68. The exhibit below highlights selective financial measures for the years 2012 and 2013 for a steel manufacturer.

Exhibit

	2013	2012
ROE	15.7%	13.2%
Tax rate	35%	40%
EBT/EBIT	95.7%	95.7%
EBT margin	7.4%	6.9%
EBIT margin	8.9%	7.7%
Financial leverage	1.3	0.8

Between 2012 and 2013, the efficiency of the manufacturer has *most likely*:

A. improved.
B. deteriorated.
C. remained unchanged.

Correct Answer: B

Reference:
CFA Level 1, Volume 3, Study Session 8, Reading 28, LOS d

Total asset turnover has decreased indicating a decline in efficiency.

ROE = Tax burden × Interest burden (or EBT/EBIT) × EBIT margin × total asset turnover × leverage

Tax burden = 1 – tax rate

The total asset turnover measures the efficiency of a company.
Total asset turnover (2012) = 0.132/[(1 – 0.4)(0.957)(0.077)(0.8)] = 3.73
Total asset turnover (2013) = 0.157/[(1 – 0.35)(0.957)(0.089)(1.3)] = 2.18

Questions 69 to relate to 76 Corporate Finance

69. A company has recently undertaken a three-year project with annual cash flows of \$30,000 and a cash of \$60,000 in the terminal year. The initial investment is \$100,000 and the required rate of return is 15%.

The NPV method makes certain assumptions regarding the reinvestment rate and opportunity cost of funds. Based on the data provided, which of the following statements is *most likely* correct?

A. The reinvestment rate is equal to 8.4%.
B. The opportunity cost of funds is equal to 8.4%.
C. The reinvestment rate and opportunity cost of funds are both equal to 15%.

Correct Answer: C

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 35, LOS e

The NPV method assumes that all cash flows are reinvested at the required rate of return. The opportunity cost of funds is equal to the required rate of return. This is because the method assumes that either one can fund other projects that pay a 15% return or pay back sources of capital which cost 15%.

70. Miguel Palmer is evaluating two projects, A and B. The cash flows, investment outlays, IRRs, and NPVs for both projects are given below.

	Cash Flows						
Year	0	1	2	3	4	NPV	IRR (%)
Project A	-200	85	85	85	120	93.34	28.97
Project B	-190	0	0	0	420	96.87	21.93

The discount rate at which both projects will have the same NPV is *closest* to:

A. 10.97%.
B. 25.45%.
C. 28.97%.

Correct Answer: A

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 35, LOS d

The crossover rate (discount rate at which both NPVs) are equal is equal to 10.97%. Taking the differential of each year's cash flow and calculating the IRR of these differential cash flows yields the crossover rate (see below).

CF0 = – 200 – (– 190) = – 10
C01 = 85 – 0 = 85
C02 = 85 – 0 = 85
C03 = 85 – 0 = 85
C04 = 120 – 420 = – 300
CPT IRR = 10.97%

71. Which of the following components is *least likely* considered as part of capital budgeting decisions?

A. Financing costs
B. Opportunity costs
C. Before-tax cash flows

Correct Answer: A

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 35, LOS a

Financing costs are ignored in capital budgeting decisions. This is because these costs are already incorporated in the required rate of return. Incorporating these costs in cash flows and the required rate of return will result in double counting.

Opportunity costs are a vital component of capital budgeting decisions and incorporated as part of incremental cash flows.

Although cash flows are analyzed on an after-tax basis, before tax cash flows are necessary to compute cash flows resulting from taxation.

72. Saxon Incorporated purchased a flour processing unit seven years ago at a price of $600,000. The annual cash flows generated by the processing unit are constant at $80,000. The management is considering the replacement of this unit with a more advanced one. The advanced model is worth $1,000,000.

For capital budgeting purposes, the opportunity costs associated with the processing unit are *closest* to:

A. $80,000.
B. $600,000.
C. $1,000,000.

Correct Answer: A

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 35, LOS a

Opportunity costs are what a resource is worth in its next-best use. Since the company is replacing the old unit with a new one, opportunity costs are equal to the cash flows generated by the old unit.

73. A company has recently undertaken a project. When plotting its NPV profile, the project manager identified that the profile intersects the vertical axis at an NPV of $40 million.

The discount rate at this intersection is *most likely* identified as the:

A. IRR.
B. crossover rate.
C. rate at which the required rate of return is zero.

Correct Answer: C

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 35, LOS e

The point at which the NPV profile intersects the vertical axis is where the discount rate (required rate of return) is zero.

The crossover point corresponds to the discount rate at which the NPV profiles for two projects intersect each other.

IRR is the rate at which the NPV profile intersects the horizontal axis and is equal to zero.

74. Which of the following statements is *most likely* correct regarding the impact of taxes on the cost of capital?

A. Interest costs serve to reduce a company's cost of debt.
B. Cost of equity may require adjustments for taxes if preferred stock is part of the capital structure.
C. The weighted average cost of capital reflects a required rate of return after adjusting all its components for taxation.

Correct Answer: A

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 36, LOS b

The payment of interest reduces a company's taxable income and taxes. The payment of interest will reduce a company's cost of debt by a factor '1 – t'.
Cost of equity does not require adjustments for taxes. The payment of dividends is non-taxable.

The weighted average cost of capital is adjusted for taxes to the extent of the cost of debt capital; equity capital is not adjusted for taxes.

75. Skylark Manufacturers is situated in a developing country where equity markets have been always been highly volatile with unstable equity market returns. In addition, political turmoil has often mandated temporary halts in market trading. As a consequence, the Skylark stock has rarely generated stable performance. Carl Jung, a potential investor is attempting to determine Skylark's cost of equity and the most appropriate method to derive this estimate.

Which of the following statements *most* accurately characterizes a consequence of the chosen method to estimate Skylark's cost of equity?

A. The dividend discount model approach will generate the most stable equity risk premium estimate.
B. The arithmetic mean estimate for equity risk premium generated by the historical approach will exceed the geometric mean estimate.
C. The CAPM approach will adequately factor sources of priced risk such as macro-economic and company-specific factors affecting the Skylark stock.

Correct Answer: B

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 36, LOS h

Since the developing market is characterized by volatility resulting in an unstable market rate of returns the arithmetic mean, generated by the historical risk premium approach, is greater than the geometric mean.

The dividend discount model approach, which is implemented using the Gordon growth model, assumes a long-run trend growth rate, which corporate earnings will often meet. Given volatile equity markets, Skylark is less likely to meet a long-run trend growth rate.

A limitation of the CAPM approach is that it only captures one source of risk, market risk. Other sources of priced risk can be captured using a multifactor model.

76. Ester Miguel is using data concerning a publically traded comparable to determine the asset beta for a privately traded company. The beta of the publically traded stock is 1.8 while debt-to-equity ratios and marginal tax rates are 0.4 and 30%, respectively. The privately traded corporation has a D/E ratio of 0.7 and a marginal tax rate of 25%.

Using the pure play method, the beta used to estimate the cost of capital for a project undertaken by the private entity having an identical risk and financing structure as its company is *closest* to:

A. 1.41.
B. 2.10.
C. 2.14.

Correct Answer: C

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 36, LOS i

First the beta of the public company will be unlevered. Unlevered (asset) beta of the comparable is 1.406 $\frac{1.8}{1+[1+(1-0.3)\times 0.4]}$. The unlevered beta is then levered using the financial structure of the privately traded entity. Levered beta is equal to 2.14$1.406(1+(1-0.25)\times 0.7)$. This levered beta is used to estimate the cost of capital for the company and any project identical in risk and financial structure.

Questions 77 to 88 relate to Equity Investments

77. A textile manufacturer will be undertaking a loan in six months' time. However, management is concerned about rising borrowing costs and is contemplating taking a position in a contract to remove any uncertainty.

    The contract *most* suitable to the textile manufacturer is a:

    A. commodity swap.
    B. interest rate swap.
    C. credit default swap (CDS).

    Correct Answer: B

    Reference:
    CFA Level I, Volume 5, Study Session 13, Reading 45, LOS c

    To eliminate any uncertainty concerning rising borrowing costs, the manufacturer should opt for a derivative, which locks in an interest rate. Based on the options presented, the most suitable contract for the manufacturer is the interest rate swap allowing it to make fixed interest payments and receive variable payments from the counterparty.

78. Richard Gayle holds 500 shares of a software house's stock. The shares of stock were purchased at a price of $50/share at the beginning of the year. Gayle has now decided to sell his entire holding at the end of the year when the price has risen to $60/share. 25% of the purchase is financed on margin with a call money rate of 2%. The stock has not paid any dividend and the purchase and sales commission each amount to $8/share.

    The total return on Gayle's investment for the year is *closest* to:

    A. – 14.0%
    B. – 12.5%.
    C. + 19.5%.

    Correct Answer: B

    Reference:
    CFA Level I, Volume 5, Study Session 13, Reading 45, LOS f

Initial investment ($50 × 500)	$25,000
Purchase commission ($8 × 500)	- 4,000
Trading gains/losses [($60 – $50)(500)]	+ 5,000
Margin interest paid ($50 × 500 × 0.25)(0.02)	- 125
Sales commissions paid ($8 × 500)	- 4,000
Remaining equity	21,875
Return on the initial investment	= (21,875 – 25,000)/25,000 = - 0.125 or – 12.5%

79. A market is said to be efficient if:

A. superior risk-adjusted returns are achievable on a consistent basis.
B. passive investment strategies are preferred to active investment strategies.
C. a majority of traders are able to earn profits with little risk as asset prices adjust to reflect information.

Correct Answer: B

Reference:
CFA Level I, Volume 5, Study Session 13, Reading 47, LOS a

In a highly efficient market a passive investment strategy are preferred to active strategies; the former does not seek superior risk-adjusted returns and incurs lower costs.

A market is also said to be efficient if asset prices reflect information quickly. The time needed to execute a trade to exploit inefficiencies must be at least as long as the shortest time a trader needs to execute a transaction in the asset. If many traders are able to earn profits with little risk during the time frame of the adjustment, then the market is viewed as relatively inefficient.
Lastly, a market is efficient if superior risk-adjusted returns are not achievable on a consistent basis.

80. An analyst has collected financial results with respect to Bridge Enterprises, a construction firm, as well as a key competitor for the current financial year.

Exhibit: Financial Results Concerning Bridge Enterprises & Competitor

In $ millions	Bridge Enterprises	Competitor
Market value of equity	350	400
Market value of long-term debt	80	100
Market value of short-term debt	80	50
Cash equivalents	45	50
Short-term investments	10	15
Long-term investments	8	8
Operating income	120	190

Based on the enterprise value to operating income (EV/OI) multiple, which of the following statements is *most likely* correct?

A. The competitor is favorably valued.
B. Bridge Enterprises is favorably valued.
C. Both companies are identically valued.

Correct Answer: A

Reference:
CFA Level I, Volume 5, Study Session 14, Reading 50, LOS i

EV = Market capitalization (market value of equity) + Market value of debt + market value of preferred stock – cash – short-term investments

All $ figures are in millions

EV/OI (Bridge Enterprises) = ($350 + $80 + $80 – $45 – $10)/$120 = 3.79

EV/OI (Competitor) = ($400 + $100 + $50 – $50 – $15)/$190 = 2.55

Since the competitor has a lower EV/OI multiple, it is undervalued or, in other words, favorably valued.

81. An investor has recently purchased a share of stock, which does not currently pay dividends. The first dividend is expected to be received six years from the date of purchase and will amount to $5. Thereafter, dividends will grow at a rate of 2.5% into perpetuity. The required rate of return is 10%.

The current estimated intrinsic value of the share is *closest* to:

A. $41.39.
B. $57.86.
C. $68.33.

Correct Answer: A

Reference:
CFA Level I, Volume 5, Study Session 14, Reading 50, LOS e

The value of the share (to be paid on t = 6) at t = 5 is equal to $66.67:

$$V_5 = \frac{\$5}{0.100 - 0.025} = \$66.67$$

The current value of this share is estimated at $41.39:

$$V_0 = \frac{\$66.67}{(1 + 0.10)^5} = \$41.39$$

82. During periodic rebalancing, portfolio weights of a fund benchmarked to a market-capitalization-weighted index will *most likely*:

A. have a value-tilt.
B. favor a contrarian strategy.
C. favor a momentum strategy.

Correct Answer: C

Reference:
CFA Level I, Volume 5, Study Session 13, Reading 46, LOS d

During periodic rebalancing a market-capitalization-weighted index will overweight stocks that have risen in price and underweight stocks that have fallen in price. The effect of this overweighting is similar to a momentum strategy whereby securities that have increased in price the most have the largest weights in the index.

On the other hand, during rebalancing a fundamental-weighted index will have the contrarian effect; portfolio weights will shift towards securities that have fallen in relative value. Additionally, an important property of fundamental weighting is that it leads to indices that have a value tilt.

83. Dave Allen is an equity analyst who is evaluating the weighting scheme of a price weighted equity index comprising of four stocks, A, B, C and D. The prices of the four stocks as well as the index value are summarized in an exhibit. The issuers of stock A have announced a 2-for-1 stock split. The values in the index are inclusive of dividends paid.

Exhibit:
Index Constituent Stocks, Values and Index Value

Security	Value Before Split	Weight Before Split (%)
A	35	35
B	32	32
C	15	15
D	18	18
Total	100	100

To preserve the value of the index at 100, index providers will need to:

A. adjust the divisor to 1.3.
B. adjust the divisor to 3.3.
C. make no further adjustments as the index will self-correct for stock splits.

Correct Answer: B

Reference:
CFA Level I, Volume 5, Study Session 13, Reading 46, LOS c

A property unique to price-weighted indexes is that a stock split on one constituent security will change the weights of all the securities in the index.

In order to prevent the stock split from affecting index value, the index provider will need to adjust the value of the index divisor, which is currently equal to 4.

The split will change the weights of all the constituent securities as follows:
Stock A's total will decline to 17.5 (35/2).

The sum of index values will decline to 82.5 [100 – (35/2)].
Initial index value is equal to 25 (100/4).
The divisor is adjusted to 3.3 (82.5/25).

84 To construct a float-adjusted market capitalization weighted index, possible adjustments include removing shares:

A. of small-cap stocks.
B. held by corporations.
C. held by foreign investors.

Correct Answer: B

Reference:
CFA Level I, Volume 5, Study Session 13, Reading 46, LOS c

Market float is the number of shares available to the public for investing. Adjusting indexes for market float involves excluding shares not available for public investment; these shares typically include closely held shares, shares held by corporations and governments, and shares not available to foreign investors.

85. The exhibit below displays a market's limit standing order book on a particular trading day.

Exhibit: Market's Standing Limit Order Book

Time of Arrival	Bid/Offer	Limit Price	Display status
09:10:12	Bid	84.2	Displayed
09:40:00	Offer	85.6	Hidden
10:02:00	Offer	86.0	Displayed
10:02:00	Bid	83.2	Displayed
13:09:15	Bid	85.1	Hidden

Which bid and offer orders will be given order precedence?

	Bid	Offer
A.	13:09:15	09:40:00
B.	09:10:12	10:02:00
C.	10:02:00	10:02:00

Correct Answer: B

Reference:
CFA Level I, Volume 5, Study Session 13, Reading 45, LOS j

The order precedence hierarchy is given by price priority (highest priced buy and lowest priced sell orders), display precedence at a given price, and finally time precedence among all orders with the same display status at a given price.

The most aggressively priced buy order (highest bid price) is the one arriving at 13:09:15. However, this order is hidden and is the last to arrive. Therefore priority will be given to the second highest buy order arriving at 09:10:12.

The most aggressively price sell order (lowest offer price) is the one arriving at 09:40:00. However, the order is hidden and therefore priority will be given to the next sell order arriving at 10:02:00.

86. The first step in index construction and management *most likely* involves determining the:

A. target market.
B. index weighting scheme to employ.
C. specific securities to include in an index.

Correct Answer: A

Reference:
CFA Level I, Volume 5, Study Session 13, Reading 46, LOS d

The first step in index construction and management is to determine the target market, market segment or asset class the index in intended to represent. Once the target market is identified, the number of securities and the specific securities to be included in the index must be determined.

87. A trader purchased 2,000 shares of stock three months ago at a price of $40. The trader is concerned that stock prices may fall in the near future and would like to place a limit on falling prices by issuing a GTC stop 35, limit 30 market sell order.

The instructions issued by the trader and the maximum loss on the position are *most likely*:

	Instructions	maximum loss:
A.	Execution	$10,000.
B.	Validity	unlimited.
C.	Validity	$20,000.

Correct Answer: C

Reference:
CFA Level I, Volume 5, Study Session 13, Reading 45, LOS g

The instructions issued by the traders are classified as validity instructions as the GTC order indicates when the trade may be filled.

The limit 30 sell order will ensure that the sell order will not be executed at a price below 30.

Therefore, the maximum loss is \$20,000 [(\$40 – \$30) × 2,000].

88. For the year ended December 31, 2013 a company reported return-on-equity (ROE) of 15% using average book values. In the same year the company generated net income of \$10.25 million. Total shareholder's equity reported in the company's balance sheet at the beginning of the year amounted to \$85.65 million. The company has 1,000,000 equity shares outstanding in the year 2013.

The book value of equity per share for the year 2013 is *closest* to:

A. \$51.02.
B. \$85.65.
C. \$222.32.

Correct Answer: A

Reference:
CFA Level I, Volume 5, Study Session 14, Reading 48, LOS h

Book value of equity per share = Total shareholder's equity (at year-end)/Shares outstanding

Firstly, total shareholder's equity at the end of the period needs to be determined:

$$\text{ROE} = \frac{\text{Net income}_t}{(\text{Book value of equity}_t + \text{Book value of equity}_{t-1})/2}$$

$$0.15 = \frac{\$10{,}250{,}000}{(\text{Book value of equity}_t + 85{,}650{,}000)/2}$$

Book value of equity$_t$ = \$51,016,666.67

Book value of equity per share = \$51,016,666.67/1,000,000 = \$51.0167 or \$51.02

Questions 89 to 94 relate to Derivatives

89. A criticism of using derivatives includes:

    A. increased market volatility.
    B. lower market liquidity relative to underlying spot market.
    C. slower correction of price deviation from fundamental values.

    Correct Answer: A

    Reference:
    CFA Level 1, Volume 6, Study Session 17, Reading 57, LOS d

    A criticism leveled at derivatives is that an excessive amount of speculative trading with respect to derivatives can bring instability to the market. By using large amounts of leverage, speculators subject themselves as well as their creditors to substantial risk.

    Derivatives offer less costly ways of exploiting mispricing making the process of price correction more rapid.

    Derivatives markets have more liquidity than underlying spot markets due to the smaller amount of capital required to get equivalent exposure of the underlying.

90. The protective put is most often viewed as an example of insurance, with the option premium being the insurance cost. Which of the following concerning the comparison of a put option with insurance is *most* accurate?

    A. A higher exercise price for the put is analogous to a higher insurance deductible.
    B. A higher exercise price for the put is analogous to a lower insurance deductible
    C. A lower exercise price for the put is analogous to a restrictive insurance deductible.

    Correct Answer: B

    Reference:
    CFA Level 1, Volume 6, Study Session 17, Reading 59, LOS b

The exercise price of the put is like the insurance deductible because the magnitude of the exercise price reflects the risk assumed by the holder of the underlying. The higher the exercise price, the lower the risk assumed. In insurance, the higher the deductible, the higher the risk assumed by the insured. Hence, a higher exercise price is analogous to a lower insurance deductible and vice versa.

91. A call option is selling for $13 in which the exercise price is $120. If the price of the underlying at expiration is $111, the profit for the seller is *closest* to:

A. $0.00.
B. $9.00.
C. $13.00.

Correct Answer: C

Reference:
CFA Level 1, Volume 6, Study Session 17, Reading 59, LOS a

For a call seller profit can be calculated as follows.

Profit = $-c_T + c_0$ = -0 + 13 = 13

92. At the expiration of a call option:

A. time value is zero.
B. intrinsic value is zero.
C. option price equals to the difference between time and intrinsic value.

Correct Answer: A

Reference:
CFA Level 1, Volume 6, Study Session 17, Reading 58, LOS j

Time value reflects the potential for intrinsic value to be greater than its current intrinsic value. At expiration, the time value is equal to zero and the option price is equal to its intrinsic value.

93. Which of the following statements is *least likely* correct regarding forwards, futures and swaps?

A. Swaps can be priced as an implicit series of off-market forward contracts, whereby each contract is priced the same.
B. Costs incurred and benefits received by holding the underlying affect the forward price by lowering and raising it, respectively.
C. Futures prices can differ from forward prices because of the effects of interest rates on the interim cash flows from the daily settlement.

Correct Answer: B

Reference:
CFA Level 1, Volume 6, Study Session 17, Reading 58, LOS f & g

Option B is incorrect while both options A and C are correct.

- Swaps can be priced as an implicit series of off-market forward contracts, whereby each contract is priced the same.
- Costs incurred and benefits received by holding the underlying affect the forward price by raising and lowering it, respectively.
- Futures prices can differ from forward prices because of the effects of interest rates on the interim cash flows from the daily settlement.

94. An American option can be worth more than an otherwise equivalent European option if:

A. it has time value.
B. there are no cash flows on the underlying.
C. it is a callable and there are cash flows on the underlying.

Correct Answer: C

Reference:
CFA Level 1, Volume 6, Study Session 17, Reading 58, LOS i

An American call option will be worth more than an otherwise equivalent European call option if the underlying makes cash payments during the life of the option making early exercise worthwhile.

Questions 95 to 106 relate to Fixed Income

95. An investor has purchased a 4-year, 5% annual coupon-payment bond. The sequence of spot rates over the bond's term to maturity is illustrated in the exhibit below.

Exhibit: Spot Rate Sequence over the Bond's Term to Maturity

Time-to-maturity	Spot rate (%)
1 year	2.3
2 year	3.1
3 year	4.6
4 year	5.2

The price of the bond (per 100 of par value) is *closest* to:

A. \$99.69.
B. \$100.00.
C. \$114.33.

Correct Answer: A

Reference:
CFA Level I, Volume 5, Study Session 15, Reading 53, LOS c

$$\frac{\$5}{(1+0.023)^1}+\frac{\$5}{(1+0.031)^2}+\frac{\$5}{(1+0.046)^3}+\frac{\$105}{(1+0.052)^4}=\$99.689$$

96. A 12% semi-annual coupon paying bond has a three-year term-to-maturity. Based on the spot rate sequence at the time of bond issuance, the bond is priced at 105.80 (per 100 of par value).

Relative to bond's coupon rate, the yield-to-maturity of the bond issue is *most likely*:

A. equal.
B. lower.
C. higher.

Correct Answer: B

Reference:
CFA Level I, Volume 5, Study Session 15, Reading 53, LOS c

Given that the bond is priced at 105.64, the yield to maturity can be determined using the following equation by solving for 'r':

$$105.80 = \frac{6}{(1+r)^{0.5\times2}} + \frac{6}{(1+r)^{1\times2}} + \frac{6}{(1+r)^{1.5\times2}} + \frac{6}{(1+r)^{2\times2}} + \frac{6}{(1+r)^{2.5\times2}} + \frac{106}{(1+r)^{3\times2}}$$

r = 4.862%

Since the bond is a semi-annual paying bond, doubling 'r' will give a yield-to-maturity of 9.725%. Relative to the annual coupon rate, the bond's yield-to-maturity is lower.

97. An investor has purchased a 7-year, 10% annual coupon payment bond issued at 90.20 per 100 of par value and holds it till maturity. All coupon payments will be reinvested at a rate of 8%.

The interest-on-interest gain from compounding the reinvested coupons is *closest* to:

A. $19.23.
B. $20.00.
C. $36.37.

Correct Answer: A

Reference:
CFA Level I, Volume 5, Study Session 16, Reading 55, LOS a

The future value of the coupons on the bond's maturity date is 87.228 per 100 of par value.
$[10 \times (1.08)^6] + [10 \times (1.08)^5] + [10 \times (1.08)^4] + [10 \times (1.08)^3] + [10 \times (1.08)^2] + [10 \times (1.08)^1] + 10 = 89.228$

The interest on interest gain on compounding is $19.23 ($89.228 – $70).

98. The investor's realized horizon yield matches the yield-to-maturity if:

A. the bond is sold at a price to generate capital gains.
B. the bond is sold at a price on the constant-yield price trajectory.
C. coupon payments are reinvested at a rate higher than the original yield-to-maturity.

Correct Answer: B

Reference:
CFA Level I, Volume 5, Study Session 16, Reading 55, LOS a

The investor's realized horizon yield matches the yield-to-maturity if (1) coupon payments are reinvested at the same rate as the original yield-to-maturity and (2) the bond is sold at a price on the constant-yield price trajectory, that is, no capital gain or losses are realized.

99. The manager of defined benefit pension plan would like to measure the sensitivity of its retirement obligations to market interest rate changes. The discount rate of the plan is currently 8.2%. The company has hired an analyst who has compiled estimates of pension plan liabilities based on assumed interest rate changes.

Exhibit: Present Value of Liabilities & Interest Rate Assumptions

Interest Rate Assumption	Present Value of Liabilities
7.95%	$102.8 million
8.20%	$90.5 million
8.45%	$86.4 million

The effective duration of the plan's scheme liabilities is *closest* to:

A. 0.36.
B. 23.93.
C. 36.24.

Correct Answer: C

Reference:
CFA Level I, Volume 5, Study Session 16, Reading 55, LOS b

Effective Duration = $\frac{(PV_{-})-(PV_{+})}{2\times(\Delta Curve)\times(PV_0)} = \frac{102.8-86.4}{2\times0.0025\times90.5} = 36.24$

100. Rica Corp is a rice manufacturer operating in Mexico. Maria Salas is the company's chief financial analyst. Salas is attempting to calculate and interpret key fundamental measures by examining selective information from the company's financial statements over the previous two financial years. She has compiled the necessary data in an exhibit.

Exhibit: Rica Corp's Key Financial Information

Mexican Pesos (In Millions)	2013	2012
Gross profit	35.8	25.6
Operating profit	28.9	20.1
Interest expense	5.6	3.1
Funds from operations	125.8	95.0

Based on the information compiled by Salas, she will *most likely* conclude that between 2012 and 2013 Rica Corp's:

A. credit risk has increased.
B. ability to pay dividends has improved.
C. ability to cover interest payments has deteriorated.

Correct Answer: C

Reference:
CFA Level I, Volume 5, Study Session 16, Reading 56, LOS f

The credit risk of a company is typically measured using financial leverage ratios. Each ratio includes either total capital or debt as a component. There is insufficient information to calculate such ratios.

The ability of a company to pay dividends to shareholders is measured using free cash flow before dividends. There is insufficient information to arrive at such a conclusion.

The company's ability to cover interest payments is measured using interest coverage ratios such as EBIT (or operating profit)/interest expense. Rica Corp's ability to cover interest payments has deteriorated as evidenced by the decline in ratio (see below).

EBIT/Interest expense (2012) = 20.1/3.1 = 6.484

EBIT/Interest expense (2013) = 28.9/5.6 = 5.161

101. An industry analyst is evaluating financial information concerning three competitors in the steel manufacturing industry. He aims to determine which company has the highest credit quality based on the information collected.

Exhibit:
Financial Information Concerning Three Competitors in the Steel Manufacturing Industry

	Company A	Company B	Company C	Industry Average
Free cash flow from operations/debt (%)	165.2	90.5	135.8	150.6
EBITDA interest coverage ratio (x)	40.8	55.0	43.8	45.1
Total debt ($ millions)	543.0	330.1	400.5	340.8

Which company will receive the highest credit rating?

A. Company A
B. Company B
C. Company C

Correct Answer: A

Reference:
CFA Level I, Volume 5, Study Session 16, Reading 56, LOS g

Company A will receive the highest credit rating based on its free cash flow from operations-to-debt measure. Credit agencies use this measure to assign credit ratings.

102. A five-year bullet bond has a principal amount and coupon rate of $1,000 and 4%, respectively. The market interest rate is assumed to be constant at 4% over the bond's term to maturity. The bond will be issued and redeemed at par.

The principal payment due in Year 2 of the bond issue is *closest* to:

A. $0.
B. $40.
C. $200.

Correct Answer: A

Reference:
CFA Level I, Study Session 15, Reading 51, LOS e

A bullet bond will make a principal repayment at bond maturity. No principal payments are made prior to that date.

103 . Which of the following covenants will protect unsecured creditors' claims in the event of default?

A. Limitations on lien
B. Restricted payments
C. Change of control put

Correct Answer: A

Reference:
CFA Level I, Study Session 16, Volume 5, Reading 56, LOS j

The limitations on lien covenant is meant to place restrictions on how much secured debt an issuer can have. The covenant is particularly important to unsecured creditors who are structurally subordinated to secure creditors.

104. A fixed income analyst is evaluating three potential bond issues for interest rate risk. Data concerning the issues are collected in an exhibit (see below).

Exhibit: Data Concerning Potential Bond Issues

Issue	Modified Duration	Convexity	Δ Yield*
A	5.81	20.65	15 bps
B	7.03	40.80	25 bps
C	13.89	125.78	10 bps

*Change in the annual yield-to-maturity

Based on the data collected, which issue has the highest interest rate risk?

A. A
B. B
C. C

Correct Answer: B

Reference:
CFA Level I, Study Session 16, Volume 5, Reading 55, LOS i

The change in each issue's present value is an indicator of interest rate risk.

$\%\Delta PV^{Full} \approx (-\text{ AnnModDur} \times \Delta\text{Yield}) + [1/2 \times \text{AnnConvexity} \times (\Delta\text{Yield})^2]$

$\%\Delta PV^{Full}$ (Issue A) $\approx (-\ 5.81 \times 0.0015) + [1/2 \times 20.65 \times (0.0015)^2] = -\ 0.008692$

$\%\Delta PV^{Full}$ (Issue B) $\approx (-\ 7.03 \times 0.0025) + [1/2 \times 40.80 \times (0.0025)^2] = -\ 0.017448$

$\%\Delta PV^{Full}$ (Issue C) $\approx (-\ 13.89 \times 0.0010) + [1/2 \times 125.78 \times (0.0010)^2] = -\ 0.013827$

Based on the calculated figures, Bond B has the highest degree of interest rate risk (a potential loss of 1.75%) followed by Bond C (a potential loss of 1.38%) and lastly by Bond A (a potential loss of 0.87%).

105. An investor is choosing between two alternative zero-coupon bond investments. The first alternative involves purchasing and holding a 2-year zero-coupon bond to maturity. The second alternative involves purchasing a 1-year zero-coupon bonds and reinvesting the proceeds in another one-year zero-coupon one year from now. The investor selects the latter alternative. The yields to maturities on one- and two-year government bonds have been compiled in the exhibit below.

Exhibit: Data Concerning 1- and 2-Year Zero-Coupon Bonds

Maturity	Price (per 100 of par value)	Yield-to-Maturity*
1 year	98.50	3.640
2 years	97.60	3.753

*Yields are stated on a semi-annual basis

The minimum yield-to-maturity to be expected by the investor should be *closest* to:

A. 2.50%.
B. 3.87%.
C. 4.72%.

Correct Answer: B

Reference:
CFA Level I, Volume 5, Study Session 15, Reading 53, LOS h

Since the investor has selected the second alternative the yield-to-maturity should be higher than the 1y1y forward rate of 3.87%, which serves as the breakeven rate.

The 1y1y implied forward rate is calculated below:

$$\left(1+\frac{0.03640}{2}\right)^2 \times \left(1+IFR_{2,2}\right)^2 = \left(1+\frac{0.03753}{2}\right)^4$$

$IFR_{2,2}$ = 0.01933 × 2 = 0.03866 or 3.866%

106. The single auction process:

A. will result in winning bidders paying the same price.
B. will increase the cost of funds in the form of a higher coupon rate.
C. is a secondary market mechanism used to issue U.S. Treasury bonds to the public.

Correct Answer: A

Reference:
CFA Level I, Volume 5, Study Session 15, Reading 52, LOS c

The single auction process encourages aggressive bidding and potentially results in a lower cost of funds (i.e. lower coupon rate) for U.S. Treasuries because all winning bidders pay the same price.

Most U.S. Treasuries are bought at auction by primary dealers serving primary markets.

Questions 107 to relate to 112 Alternative Investments

107. Alternative investments are characterized by:

   A. moderate degree of liquidity.
   B. high degree of manager specialization.
   C. low correlation with traditional investments

Correct Answer: C

Reference:
CFA Level 1, Volume 6, Study Session 18, Reading 60, LOS a

Alternative investments are characterized by:

- Illiquidity of underlying investments
- Low degree of manager specialization
- Low correlation with traditional investments.

108. Which of the following is *least likely* a characteristic common to hedge funds?

   A. Exclusive membership
   B. High degree of leverage
   C. Passive investment vehicles

Correct Answer: C

Reference:
CFA Level 1, Volume 6, Study Session 18, Reading 60, LOS d

Hedge funds are aggressively managed with the goal of generating high active or absolute returns.

Hedge funds are typically set up as a private investment partnership open to a limited number of investors who are willing to make a large investment; the membership to the fund is exclusive.

These funds employ a high degree of leverage.

109. Which of the following private equity strategy generally refers to minority equity investments in more mature companies that are looking for capital to expand or restructure operations, enter new markets, or finance major acquisitions?

   A. Venture capital.
   B. Leveraged buyouts.
   C. Development capital.

Correct Answer: C

Reference:
CFA Level 1, Volume 6, Study Session 18, Reading 60, LOS d

Development capital generally refers to minority equity investments in more mature companies that are looking for capital to expand or restructure operations, enter new markets, or finance major acquisitions.

110. Which of the following statements is *least likely* correct regarding timberland and farmland?

   A. Only timberland provide flexibility in harvesting.
   B. Both timberland and farmland have three primary return drivers.
   C. There is little flexibility in harvesting in both timberland and farmland.

Correct Answer: C

Reference:
CFA Level 1, Volume 6, Study Session 18, Reading 60, LOS g

Both options A and B are correct.

Timber can be grown and easily stored by nit harvesting. This feature offers flexibility of harvesting more trees when timber prices are up and delaying harvest when prices are down. Timber prices has three primary return drivers: biological growth, commodity price changes and land price changes.

There is little flexibility in harvesting in farmland. Farmland has three primary return drivers: harvest quantities, commodity prices, and land price changes.

111. Littleton Associates is a portfolio management firm which manages the accounts of high net worth clients. Rector Santana is Littleton's senior portfolio manager and manages real estate, hedge funds and venture capital investments. It is the end of the year and Littleton's performance appraisal committee measuring the risk-adjusted portfolio returns earned by Santana using the Sharpe ratio.

The risk measure used by the committee to evaluate Santana is *most likely*:

A. appropriate.
B. inappropriate; the use of the ratio may result in a smoothed return distribution.
C. inappropriate; the ratio overestimates the diversification impact for a broad portfolio of managers and alternative investments.

Correct Answer: B

Reference:
CFA Level 1, Volume 6, Study Session 18, Reading 60, LOS g

The Sharpe ratio may not be the appropriate risk-return measure for alternative investments because measures of standard deviation may not be appropriate given that the underlying asset classes are illiquid. When asset classes are illiquid, estimates rather than actual transaction prices may be used for valuation purposes. As a result, results may be smoothed.

The Sharpe ratio ignores the diversification impact for a broad portfolio of managers and alternative investments.

112. A hedge fund has undertaken an equity hedge in which the net position is long the underlying securities. This position is undertaken based on the view that market prices will rise and stocks will generate capital gains. The strategy being employed by the fund is *most likely* classified as:

A. activist.
B. fundamental growth.
C. quantitative directional.

Correct Answer: B

Reference:
CFA Level 1, Volume 6, Study Session 18, Reading 60, LOS d

A fundamental growth strategy takes long position in companies identified as exhibiting high growth and capital appreciation.

An activist strategy focuses on the purchase of a sufficient amount of equity shares in order to influence a company's policies or direction.

A quantitative directional strategy takes either a long or short position in securities identified as undervalued or overvalued, respectively. The fund varies its net short or long exposure depending on the anticipated direction of the market and stage in the market cycle.

Questions 113 to 120 relate to Portfolio Management

113. Assuming lending and borrowing rates are the same, if an investor borrows at the risk free rate and invest that amount in market portfolio (M), on the capital market line (CML) the investor's portfolio will *most likely* lie

A. at point M and the slope of the CML will be a straight line.
B. on the right of point M and the slope of the CML will be a straight line.
C. on the right of point M and the slope of the CML will be kinked at point M.

Correct Answer: B

Reference:
CFA Level 1, Volume 1, Study Session 12, Reading 43, LOS b

Assuming lending and borrowing rates are the same, if an investor borrows at the risk free rate and invest that amount in market portfolio (M), on the capital market line (CML) the investor's portfolio (referred to as borrowing portfolio) will *most likely* lie on the straight line to the right of M i.e. extended portion of the straight line joining R_f and M. As lending and borrowing rates are assumed to be the same therefore the slope of the CML will be a straight line.

114. Is it beneficial to add new asset to the portfolio, if the Sharpe ratio of the new asset is greater than the Sharpe ratio of the current portfolio?

A. No.
B. Yes.
C. Not always.

Correct Answer: C

Reference:
CFA Level 1, Volume 1, Study Session 12, Reading 42, LOS h

If the Sharpe ratio of new asset is greater than the Sharpe ratio of the current portfolio times the correlation coefficient, it is beneficial to add the new asset. By comparing only the Sharpe ratio of the new asset with the Sharpe ratio of the current portfolio, it may or may not be beneficial to add the new asset to the portfolio.

115. T.S. Associates is a portfolio management firm managing the investment portfolios of high net worth clients. The chief investment officer is evaluating the performances of three junior portfolio managers – Robert Smith, Dana Port, and Jeremy East. Information concerning the results achieved by the managers is given below:

Manager	Return (%)	σ (%)	β
Smith	12	11	0.8
Port	14	15	1.4
East	9	7	1.1
Market portfolio	8	7	
Risk-free rate	2		

Based on the information presented in the exhibit, the M^2 measure is highest for:

A. Smith.
B. Port.
C. East.

Correct Answer: C

Reference:
CFA Level 1, Volume 1, Study Session 12, Reading 43, LOS h

The M^2 measure is the highest for East.

$$M^2 = (R_P - R_f)\frac{\sigma_m}{\sigma_p} - (R_m - R_f)$$

$$M^2 \text{ (Smith)} = (12\% - 2\%)\frac{7\%}{11\%} - (8\% - 2\%) = 0.36\%$$

$$M^2 \text{ (Port)} = (14\% - 2\%)\frac{7\%}{15\%} - (8\% - 2\%) = -0.40\%$$

$$M^2 \text{ (East)} = (9\% - 2\%)\frac{7\%}{7\%} - (8\% - 2\%) = 1.00\%$$

116. An investor who is willing to take additional risk and is using the capital market line to make investment decisions will *most likely*:

A. lend a portion of his wealth at the risk-free rate.
B. select portfolios lying above the capital market line.
C. undertake a leveraged position in the market portfolio.

Correct Answer: C

Reference:
CFA Level 1, Volume 1, Study Session 12, Reading 43, LOS b

If the investor chooses to take greater risk he should move along the capital market line to the right of the market portfolio. He will borrow at the risk-free rate to invest more in the market; this will create a leveraged position in the risky portfolio and is represented by a negative investment in the risk-free asset.

Portfolios falling to the left of the market portfolio represent lending portfolios and have lower risk and return; thus these portfolios are unsuitable for the investor in question.
Any point below the CML is not achievable with respect to capital market theory.

117. Lance Gayle is an asset advisor at Walsh & Homer, a portfolio management firm in Dallas, Texas. He is evaluating three alternative asset classes for one of his client's portfolios. Gayle's main objective is to select an asset class, which will maximize his client's risk-adjusted portfolio returns. Expected return and risk data concerning the three alternatives is summarized in an exhibit. The risk-free rate of return is equal to 0.8%.

Exhibit:
Data Concerning Expected Return and
Standard Deviation for Potential Asset Classes

Asset Class	Expected Annual Return (%)	Expected Annual Standard Deviation (%)
Commodities	9.1	12.4
Emerging market equities	11.8	15.6
Long-term corporate bonds	7.2	8.9

Which of the proposed asset classes will meet Gayle's objective?

A. Commodities
B. Emerging market equities
C. Long-term corporate bonds

Correct Answer: C

Reference: CFA Level 1, Volume 1, Study Session 12, Reading 43, LOS h

Based on the calculated Sharpe ratio for each asset class long-term corporate bonds will maximize the client's risk-adjusted portfolio returns.

Sharpe ratio = $\dfrac{R_P - R_f}{\sigma_P}$

Sharpe ratio (Commodities) = $\dfrac{9.1\% - 0.8\%}{12.4\%} = 0.6694$

Sharpe ratio (Emerging market equities) = $\dfrac{11.8\% - 0.8\%}{15.6\%} = 0.7051$

Shape ratio (Long-term corporate bonds) = $\dfrac{7.2\% - 0.8\%}{8.9\%} = 0.7191$

118. Joyce Rogers, aged 35, is a dentist employed at a state hospital in France. Rogers is divorced with two children, aged 4 and 10 respectively. She has decided to revise her financial situation and obtain advice from Malcolm Smith, her financial advisor. Smith has summarized the following information concerning Rogers:

- Rogers receives a basic annual salary of €150,000 which adequately covers her annual living expenses. She is entitled to an annual pension upon her retirement which will be adequate to fund her living expenses.
- She lives in a rented apartment paying a monthly rental of €3,500.
- Her children go to public schools. She aims to collect sufficient funds to finance her children's college education.
- In addition, she aims to be the owner of a residential property before she retires.
- In her discussion with Smith Rogers explicitly stated, "As a child my parents' financial conditions were unstable. Consequently, I have a conservative attitude towards decision making."

Which of the following statements accurately describes Rogers' risk tolerance?

A. Rogers has a low ability and willingness to take risk.
B. Rogers has a low ability to take risk, but a high willingness to take risk.
C. Rogers has a high ability to take risk, but a low willingness to take risk.

Correct Answer: C

Reference:
CFA Level 1, Volume 1, Study Session 12, Reading 44, LOS c

Rogers has a high ability to take risk. Her annual salary adequately covers her living expenses and she is optimistic with respect to her retirement living expenses being covered by pension.
Based on Rogers' discussion with Smith, she appears to have a low willingness to tolerate risk.

Her conservative attitude suggests she will not be open to risk-taking.

119. Which of the following is a valid assumption of the capital asset pricing model (CAPM)?

A. Investors are risk-neutral.
B. Investors cannot influence trade prices.
C. All investors hold a combination of the risk-free asset and market portfolio.

Correct Answer: B

Reference:
CFA Level 1, Volume 1, Study Session 12, Reading 43, LOS f

CAPM assumes that investors are price-takers; that is, there are many investors with no investor being large enough to influence prices. CAPM also assumes investors are risk-averse and expect to be compensated for bearing risk.

120. Bella Harris, CFA, is a portfolio manager employing a utility formula of $\mu = E(r) - 0.5A\sigma^2$ to select asset classes for her clients' investment portfolios. Presently Harris is selecting suitable asset classes for two clients – Graham Lake, a risk neutral investor, and Caroline Davis, a risk-loving investor. She has compiled annual expected return and risk data in the exhibit below:

Exhibit:
Expected Return and Standard Deviation Data of Potential Asset Classes

Asset Class	Expected Return E(r)*	Standard Deviation*
1	14%	18%
2	16	22
3	20	25
4	25	31

*Expected Return and Standard Deviation represent annual figures.

The *most* appropriate asset class for the two clients, respectively, is:

	Lake	Davis
A.	1	4.
B.	2	3.
C.	4	4.

Correct Answer: C

Reference:
CFA Level 1, Volume 1, Study Session 12, Reading 42, LOS h

The most appropriate asset class for Lake is 4. This is because risk-neutral investors care only about return and thus have a risk aversion coefficient of 0.

The most appropriate asset class for Davis is 4. A risk-loving investor enjoys both high risk and returns and thus has a negative risk aversion coefficient. Investment 4 has the highest risk and return.