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CFA Level I 5th Mock Exam
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Revision 1

FinQuiz.com – 5th Mock Exam 2015 (AM Session)

Questions	Topic	Minutes
1-18	Ethical and Professional Standards	27
19-32	Quantitative Methods	21
33-44	Economics	18
45-68	Financial Reporting and Analysis	36
69-76	Corporate Finance	12
77-88	Equity Investments	18
89-94	Derivative Investments	9
95-106	Fixed Income Investments	18
107-112	Alternative Investments	9
113-120	Portfolio Management	12
	Total	180

Questions 1 through 18 relate to Ethical and Professional Standards

1. Jason Storm is a research analyst at Pickler Associates. Storm is preparing an economic research report on the performance of IT companies in his country. Following successive years of strong profitability, Storm now predicts that the industry will experience a slump in performance thereby negating the performance of the companies being followed. His forecast is based on discussions with company executives, analysis of historical financial statements and comparisons with the international IT industry trends. Based on this forecast he strongly recommends avoiding IT stocks. Storm's supervisor states that his forecast and recommendation is contrary to historical industry performance and his own forecast developed for the local industry. His supervisor also claims that the local industry is far behind its international counterpart in terms of development making any comparison a waste of an effort.

   By issuing the research report with his own forecast, Storm will *most likely*:

   A. comply with the CFA Institute Standards of Professional Conduct.
   B. violate the standard relating to diligence and reasonable basis by failing to conduct thorough investigation.
   C. violate the standard relating to employer loyalty by issuing a recommendation contrary to his employer's forecasts.

   Correct Answer: B

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

   If Storm decides to issue a research report, he will be in violation of the CFA Institute Standards of Professional Conduct relating to diligence and reasonable basis. This is because he has failed to investigate the similarity (or lack thereof) between the local and foreign IT market. Storm has not made a thorough investigation and will violate the standards should he issue the research report with his recommendation.

   Members and candidates must take care to ensure that any recommendations are independently arrived at using their own judgment. They should not come under the pressure of their employer to issue a recommendation that is contrary to their own.

2. The management of Gum Drop Inc., a manufacturing concern, is comparing merger offers received from two of its competitors. Daisy Howard, Gum Drop Inc.'s senior executive officer is pushing for the acceptance of the offer. The decision of the acceptance rests on three officers including Howard. Believing that the manufacturer will more than likely go through, she advises her brother to purchase the stock for his clients' portfolios. To avoid the appearance of conflict, Howard's brother deliberately avoids purchasing the stock for his sister's investment portfolio, who is also a regular fee-paying client of his investment firm.

Which of the following CFA Institute Standards of Professional Conduct is *least likely* being violated?

A. Fair dealing
B. Disclosure of conflicts
C. Material non-public information

Correct Answer: B

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

Howard's brother is in violation of the standard relating to fair dealing because he does not allocate Gum Drop Inc.'s stock to his sister's investment portfolio. Members and candidates must act fairly and objectively with respect to their clients and should not discriminate against family member accounts that are regular fee-paying accounts.

The standard relating to material nonpublic information is being violated; this is because the merger offer has not yet been finalized and acting on the information before it is disseminated to the marketplace represents a violation of the standard. Howard should not share details of the proposed offer with her brother while the latter should wait until the information is publically disseminated to the public. There is no evidence that suggests that the standard relating to disclosure of conflicts is being violated.

3. ThornGate Associates is an asset management firm with its own research department. ThornGate manages the investment portfolio of Liwood, an insurance company. One of ThornGate's research analysts has come to know that Liwood is currently under financial distress. After a conversation with his supervisor, the research analyst learns that the firm is unwilling to release any information that has the potential to damage its relationship with clients.

   In order to comply with the CFA Institute Standards of Professional Conduct, the research analyst's *best* course of action would be to:

   A. leave the employer.
   B. request for a change in assignment.
   C. encourage ThornGate Associates to put Liwood on a restricted list.

   Correct Answer: C

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

   Given that ThornGate Associates is unwilling to permit dissemination of adverse opinions about a corporate client, the research analyst's best course of action would be to advise his employer to remove Liwood from the research universe and put it on a restricted list.

4. Kathleen Jones issues a recommendation to buy the Green Corp stock to her clients following a thorough analysis of its expected forecasted performance. Jones has held the Green Corp stock for several years in her investment portfolio. Immediately after issuing the recommendation, she sells the stock from her portfolio to meet a down payment for a boat purchase. Her transaction has not violated any laws and regulations.

   Is Jones' personal transaction in violation of the CFA Institute Standards of Professional Conduct?

   A. No.
   B. Yes, she will benefit personally from the trade.
   C. Yes, she is not allowed to undertake transactions in a stock, which she has recommended for her clients.

Correct Answer: A

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

According to the CFA Institute Standards of Professional Conduct relating to priority of transactions, there is nothing unethical about trading contrary to an issued investment recommendation as long as 1) clients are not disadvantaged by the trade, 2) the investment professional does not benefit personally from trades undertaken for clients and 3) the investment professional complies with applicable regulatory requirements.

Selling the stock to meet a down payment provides evidence that she is not personally benefiting from undertaking the trade. In addition, her clients are not disadvantaged by the trade. Lastly, her action complies with legal and regulatory requirements, which confirm that her actions are not in violation.

5. Transactions made on behalf of family member accounts for which members or candidates do not have beneficial ownership:

   A. are prohibited.
   B. are subject to preclearance requirements.
   C. should not supersede those undertaken for non-family member client accounts.

Correct Answer: C

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

Fee-paying family member accounts in which members or candidates do not have beneficial ownership should be treated in the same way as regular client accounts. These accounts must not be given special treatment nor disadvantaged. However, it is incorrect to state that such transactions are prohibited.

If a member or candidate has a beneficial ownership in a family member account, (s) he will be subject to preclearance requirements. This is not the case if there is an absence of beneficial ownership.

6. Wade Thomas is the senior portfolio manager at West Horizons, a firm providing brokerage and asset advisory services. Over the past two years, West's client portfolios have not been generating the returns promised by Thomas. After receiving complaints from several clients Thomas decides to allocate a portion of client accounts to an emerging market equity fund being managed by his brother-in-law, Steve Harris. Following the allocation, portfolio risk increases beyond client risk tolerance levels. Thomas strongly believes high expected returns will compensate for this increased risk in the months to come. He decides to delay notifying clients about the change until the perceived returns are generated.

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

   A. has failed to consider the suitability of the allocation to client accounts.
   B. has not disclosed the fact that the equity fund is being managed by Harris.
   C. is not permitted to reallocate client funds without receiving prior permission.

   Correct Answer: A

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

   Thomas is in violation of the Code and Standards primarily because he has failed to consider the suitability of the allocation for client accounts. The risk of the securities exceeds the risk appetite of his clients and so he has failed to understand his clients' risk profiles and is in violation of the standard relating to suitability.

   Thomas is not required to disclose the fact that the equity fund is being managed by Harris. Managers are free to select their own brokers and, since there is no conflict of interest resulting from the allocation, Thomas is not in violation.

   As a portfolio manager Thomas is fully authorized to reallocate client funds as long as a suitability analysis is undertaken. There is no requirement for the portfolio manager to seek prior permission.

7. Gregory Spark manages the accounts of several high net-worth individuals. His clients have a moderate risk tolerance and the allocation of risky investments is specifically prohibited as stated in their investment policy statement. Spark decides to allocate a portion of each client's account to an equity index fund. Two of the securities comprising the fund are highly risky with high expected returns. However, due to the effects of diversification, the overall risk level of the index fund is moderate when added to client portfolios. One of Spark's clients complains that the risk profile of the risky securities does not match his own.

Is Spark in violation of the CFA Institute Standards of Professional Conduct?

A. No.
B. Yes, he is in violation of the standard relating to suitability.
C. Yes, he is in violation of the standard relating to loyalty, prudence and care.

Correct Answer: A

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

Spark is not in violation of any CFA Institute Standards of Professional Conduct. Investment decisions must be judged in the context of the total portfolio rather than by individual investments within the portfolio. Therefore, since the risk profile of the index fund matches that of individual investors', the allocation does not constitute a violation of the CFA Institute Standards of Professional Conduct.

8. Leslie Hower is attending an investment conference in Geneva, Switzerland on behalf of her employer. At the conference the guest speaker makes two comments with respect to the implementation of the CFA Institute Standards of Professional Conduct in an investment management firm.

Statement 1: While members and candidates are permitted to rely on secondary or third-party research, the duty to verify the soundness of research rests solely on the individual alone.

Statement 2: A member or candidate who knows or should have known that information, which could have influenced the investment decision is being omitted, is in violation of the standard relating to misrepresentation.

The speaker is *most likely* correct with respect to:

A. Statement 1 only.
B. Statement 2 only.
C. both of the statements.

Correct Answer: B

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

The speaker is incorrect with respect to Comment 1 but correct with respect to Comment 2.

The CFA Institute standard relating to misrepresentation requires members and candidates ‘to not knowingly make any misrepresentations relating to investment analysis, recommendations, actions or other professional activities’. “Knowingly” means that the member or candidate knows or should have known that the misrepresentation was being made or that omitted information could alter an investment decision.

Members and candidates, who rely on secondary or third-party research, must make reasonable and diligent efforts to determine whether the research is sound. They may rely on others within the firm to determine whether secondary or third-party research is sound and use that information in good faith.

9. Janice Mahkoub is an investment manager at Page Associates. She has received an offer to serve on the board of a charitable institute. Her duties include managing $2 billion in charitable donations. Given that her line of work does not relate to providing investment advice, she accepts the offer without informing her employer.

Are Mahkoub's actions in compliance with the CFA Institute Standards of Professional Conduct?

A. Yes.
B. No, she should have not accepted the offer.
C. No, she should have notified her employer prior to accepting the offer.

Correct Answer: C

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

Mahkoub is in violation of the standard relating to employer loyalty. As a board member, Janice will be responsible for managing a considerable sum of funds, which will occupy a significant amount of her time. Thus, she is required to notify her employer prior to accepting appointment and received consent.

10. According to the CFA Institute Standards of Professional Conduct, a firewall is required to:

A. prohibit employees from front running their client trades.
B. prohibit personnel from sharing confidential client information on clients outside their department.
C. control communications between the investment banking and corporate finance areas of a brokerage firm.

Correct Answer: C

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

According to Standard II (A), material nonpublic information, firewalls are required to control relevant interdepartmental communications particularly with respect to material nonpublic information.

11. Boyle Thomas is the asset advisor at Marshall Associates who is allocating client funds to an EFT. A common trait shared by his clients is their distaste for the stock of corporations with poor environmental practices. Out of the three stocks allocated, one of them belongs to a corporation that has recently disposed its industrial waste in a nearby river. The other two stocks belong to corporations with environmental-friendly practices.

    Are Thomas's actions consistent with the CFA Institute Standards of Professional Conduct concerning suitability?

    A. No.
    B. Yes; since inclusion of the two stocks is consistent with client requirements, the allocation as a whole passes the suitability test.
    C. Yes; Thomas is not responsible for verifying the suitability of each individual investment when allocating stocks from ETFs to client accounts.

    Correct Answer: A

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

    Thomas's actions are inconsistent with the standard relating to suitability; this is because he has failed to consider the clients' distaste (which is a unique constraint specified in the IPS). Regardless of the type of investment being recommended or managed, members and candidates in an advisory relationship are required to consider the suitability of each investment in the context of the entire portfolio.

12. To prepare her research report, Sonia Graham is using a stock return forecasting model prepared by Victor Patel, a former employee at the firm she serves, ARB Capital. She concludes her report by identifying ARB Capital as its designer and stating a model forecast accuracy of 60%.

    Is Graham in violation of the CFA Institute standard relating to misrepresentation?

    A. No.
    B. Yes, she is guaranteeing investment results.
    C. Yes, she has not given credit to the Patel in her report.

Correct Answer: A

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

Graham is not in violation of the CFA Institute Standards of Professional Conduct relating to misrepresentation. Singh is not attempting to guarantee stock returns. Simply identifying a forecast accuracy percentage does not constitute a violation of this standard.

Despite Patel no longer serving the ARB Capital, the firm retains the right to continue using the work completed after he leaves. Graham is allowed to issue reports in the future without providing attribution to the prior analysts. Given that she has identified the firm as the designer of the model and not herself, she is in compliance with the misrepresentation standard.

13. Thorntop Associates is a research firm which publishes its reports in print and on its official website. Graham Barnes is Thorntop Associates' chief research analyst. With the permission of his employer, Barnes uploads reports prepared by him on his personal website in addition to the firm's. On his website, Barnes signs off his reports using his name.

Barnes has *most likely*:

A. failed to disclose any conflicts of interest in preparing reports.
B. misrepresented his relationship with Thorntop Associates on his website.
C. not violated any standards since he has obtained permission to upload reports on his website.

Correct Answer: B

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

Barnes has violated the CFA Institute Standards of Professional Conduct by giving the impression that he works as an independent analyst rather than an employee of Thorntop Associates. The standard concerning misrepresentation prohibits members and candidates from knowingly making any misrepresentations relating to investment analysis, recommendations, actions or other professional activities.

There are no conflicts of interest evident in the case that mandates disclosure.

14. Actions that construe violations of the CFA Institute Standards of Professional Conduct concerning misconduct *most likely* include:

    A. personal bankruptcy resulting from gambling in a casino.
    B. workplace negligence which causes the firm to lose millions of dollars.
    C. serving time in a juvenile as a teenager after being found guilty of drug possession.

Correct Answer: B

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

The standard concerning misconduct prohibits members and candidates from engaging in any professional conduct involving fraud, deceit or dishonesty or committing any act that reflects adversely on their professional reputation, integrity or competence.

Negligence in the workplace reflects adversely on a member's or candidate's professional competence; this action construes a violation of the standard. Bankruptcy resulting from gambling in a casino does not reflect adversely reflect on the member's or candidate's professional integrity and does not construe a violation of this standard.

Similarly being found guilty and serving time in a juvenile due to drug possession charges does not construe a violation of this standard; this is because this time was spent several years ago and does not adversely affect one's professional competence, reputation and integrity.

15. With respect to voting proxies, an investment manager will *most likely* be in violation if he:

A. votes all proxies.
B. fails to cast a vote.
C. fails to disclose proxy voting policies.

Correct Answer: B

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

An investment manager is in violation of the CFA Institute standard relating to loyalty, prudence and care if (s) he fails to cast a vote. Part of a member/candidate's duty is to vote proxies in an informed or responsible manner. Failing to cast a vote represents a violation of their duty of loyalty, prudence and care.

Voting all proxies does not necessarily construe a violation of the standard relating to loyalty, prudence and care if the investment manager has carried out a cost benefit analysis and determines that it is necessary.

Although the standard recommends members and candidates disclose proxy voting policies, this does not represent a requirement.

16. Theodore Simpson is the chief portfolio manager at L.T. Associates. He also serves on the board of a charity hospital, which is in the knowledge of his employer. Simpson routinely trades his accounts through West Brokers that provides average execution for a fee, which is lower relative to others. Dissatisfied with West Brokers' performance over the past two years, Simpson moves his client accounts to Abe & Smith, which is well-reputed for its ability to deliver above-average portfolio returns. However, the broker charges a high fee for its services. Following the shift, Simpson prepares a written memo with news of the change in broker. He intends to send this memo to his clients around the time quarterly client account statements are dispatched.

Are Simpson's actions in violation of the CFA Institute Standards of Professional Conduct?

A. No.
B. Yes, he has failed to notify clients of the change in broker on a timely basis.
C. Yes, by using Abe & Smith as a broker Simpson is not acting in his clients' best interests.

Correct Answer: A

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

Simpson's actions are consistent with the CFA Institute Standards of Professional Conduct. He has used client brokerage to pay for high quality brokerage services. The high cost of the services is justified by the quality of services. In this regard, Simpson has upheld his duty of loyalty, prudence and care.

As long as Simpson informs his clients of the change in brokerage firm, he is not in violation of any standards of professional conduct. The standard concerning communication with clients and prospects requires members and candidates to inform clients and prospects about the changes to the investment process on an ongoing basis.

17. An investment firm retains its records for a maximum period of five years after which they are disposed off. Local regulations require firms to retain records for at least four years.

In order to comply with the CFA Institute Standards of Professional Conduct, the investment firm should dispose its records after:

A. four years.
B. five years.
C. seven years.

Correct Answer: A

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

The investment management firm's record retention policy does not violate local regulations; this is because local regulations specify a minimum period for retaining records. Thus the firm is at liberty to choose how long it retains records after this period.

The CFA Institute requires members and candidates to comply with local record retention regulations. In the absence of such regulations, a minimum seven year holding period should be observed.

18. Two months ago Leslie Hower sat for the CFA Level III exam that she passed on the second attempt. Hower has been working as a full-time employee at a bank for five years and continued working even during her study years.

In a discussion with her colleague and study partner Hower states, "After passing all three levels of the CFA exam program, my past work experience will make me eligible for receiving the CFA charter upon application."

Hower's statement is *most likely*:

A. not in violation of the CFA Institute Standards of Professional Conduct.
B. is in violation of the standards as she is making guarantees tied to the CFA designation.
C. is in violation of the standards as she implies that she has passed all three levels on the first attempt.

Correct Answer: B

Reference:
CFA Level I, Volume 1, Study Session 1, Reading 2, Pages 143-144, LOS b

Hower is in violation of the standards of professional conduct as she is making guarantees tied to the CFA designation. The final award of the charter as well as judging whether her work experience matches the requisite experience criteria rests on the CFA Institute.

Hower has simply stated that she has passed all three levels and by doing so does not attempt to imply that she has never failed.

Questions 19 through 32 relate to Quantitative Methods

19 Kathy Peterson is a fixed income analyst who has made probability estimates with respect to the recovery of the principal amount of a $300,000 loan.

Scenario	Probability of Scenario	Amount Recovered	Probability of Recovery Amount
1	45	$270,000	25
		$150,000	75
2	55	$200,000	60
		$130,000	40

The expected recovery amount is *closest* to:

A. $175,600.
B. $180,000.
C. $352,000.

Correct Answer: A

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

The expected recovery amount with respect to Scenario 1 is $180,000 [($270,000)(0.25) + ($150,000)(0.75)].

The expected recovery amount with respect to Scenario 2 is $172,000 [{$200,000)(0.60) + ($130,000)(0.40).

The total expected recovery amount under the two scenarios is $175,600 [($180,000)(0.45) + ($172,000)(0.55)].

20. The risk that assets in a defined benefit plan will fall below plan liabilities is *most likely* known as:

A. variance.
B. value at risk.
C. shortfall risk.

Correct Answer: C

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

Shortfall risk is the risk that portfolio value may fall short of some minimum acceptable level over some time horizon; the risk that plan assets fall short of plan liabilities is known as shortfall risk.

Value at risk is a money measure of a minimum value of losses expected over a specified period of time.

21. In contrast to simple sampling, samples in stratified sampling:

A. are not drawn randomly.
B. produce less precise estimates of parameters.
C. fully represent each population subdivision of interest.

Correct Answer: C

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

An advantage of stratified random sampling is that it guarantees that population subdivisions of interest are represented in the sample. Stratified random sampling divides the population into sample based on one or more classification criteria and employs simple random sampling to draw samples from each stratum.

An advantage of stratified over simple random sampling is that estimates of parameters produced by the former is more precise (have a lower variance or dispersion) than estimates obtained from the latter.

22. Sam Miguel has arranged returns in an ascending order and has accordingly constructed return intervals.

Return intervals (%)	Returns observed (%)
- 35 to -31	- 34
- 31 to – 27	- 32
- 27 to – 23	- 24
- 23 to – 19	- 20
- 19 to – 15	- 18
- 15 to – 11	- 17
- 11 to – 7	- 4
- 7 to – 3	- 2

The cumulative relative frequency for the return interval – 15% to – 11% is *closest* to:

A. 0.0%.
B. 75.0%
C. 77.8%.

Correct Answer: B

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

Return intervals (%)	Frequency	Cumulative Frequency	Cumulative Relative Frequency (%)
- 35 to -31	2	2	25.0
- 31 to – 27	0	2	25.0
- 27 to – 23	1	3	37.5
- 23 to – 19	1	4	50.0
- 19 to – 15	2	6	75.0
- 15 to – 11	0	6	75.0
- 11 to – 7	0	6	75.0
- 7 to - 3	2	8	100.0

23. Over the past 12 years, Algeria's stock market index generated positive returns in only 8 years. Maria Alfonso has collected the returns over these eight years in the exhibit below:

Year	Annual Return (%)
1	8.9
2	12.5
3	14.1
4	22.7
5	27.8
6	31.9
7	38.6
8	45.7

The third quintile lies in the distance between:

A. 27.8% and 31.9%.
B. 31.9% and 38.6%.
C. 38.6% and 45.7%.

Correct Answer: A

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

The third quintile corresponds to the 60th percentile (3/5 × 100). Based on the eight years in which positive returns are generated, the third quintile lies in the distance between 27.8% and 31.9%.

$L_{60} = (n + 1)\frac{y}{100} = (8 + 1)\frac{60}{100} = 5.4$

The 60th percentile lies between the 5th and 6th items in the table or between 27.8% and 31.9%.

24. A company has concluded job interviews by short listing ten candidates each of which has an equal probability of being selected. The probability that the number of candidates selected less than or equal to seven but more than four is *closest* to:

A. 3/10.
B. 4/10.
C. 7/10.

Correct Answer: A

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

X = x	Probability Function p (x) = P (X = x)	Cumulative distribution function F(x) = P (X ≤ x)
1	0.1	0.1
2	0.1	0.2
3	0.1	0.3
4	0.1	0.4
5	0.1	0.5
6	0.1	0.6
7	0.1	0.7

Given that each participant has an equal probability of being selected, the probability of each individual outcome is equal to 0.10.

The probability $4 < X \leq 7$ is calculated as follows:
$P(4 < X \leq 7) = P(X \leq 7) – P(X \leq 4) = F(7) – F(4) = 3/10$

25. A fixed income analyst estimates that ten bonds in an investor's international fixed income portfolio have a high likelihood of default. The estimated annual default rate for bonds in the same category as the foreign bonds is 6.5%.

The standard deviation of the number of defaults over the coming year using the Bernoulli and Binomial random variables is respectively *closest* to:

A. 6.1% and 60.8%.
B. 6.5% and 65.0%.
C. 24.7% and 78.0%.

Correct Answer: C

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

Standard deviation of Bernoulli random variable =
$[p(1 – p)]^{0.5} = [0.065(1 – 0.065)]^{0.5} = 24.65\%$

Standard deviation of Binomial random variable =
$[np (1 – p)]^{0.5} = [10(0.065)(1 – 0.065)]^{0.5} = 0.7796$ or 77.96%

26. In contrast to Monte Carlo Simulation, historical simulation:

A. uses actual data.
B. executes 'what if analysis' with relative ease.
C. represents a more efficient method to value options.

Correct Answer: A

Reference:
CFA Level I, Volume 1, Study Session 3, Reading 9, LOS r.

Historical simulation samples from a historical record to simulate a process; thus the method uses actual, historical data. Monte Carlo simulation, on the other hand, uses estimates of probability distributions to generate the simulation.

Unlike Monte Carlo simulation, historical simulation does not lend itself to 'what if' analysis. The analytical model represents a more efficient method to value options.

27. The power of a test represents:

A. a Type I error.
B. the confidence level.
C. 1 – probability of a Type II error.

Correct Answer: C

Reference:
CFA Level I, Volume 1, Study Session 3, Reading 11, LOS d.

The power of a test represents the probability of correctly rejecting the null hypothesis when it is false; that is, the power of a test represents 1 – probability of a type II error.

28. Walsh Emerson is contemplating the inclusion of a South American commodity stock to his investment portfolio. Emerson will opt for the investment if the stock achieves a mean monthly return of at least 4.5%. Over the past twelve months, the stock achieved a mean monthly return of 3.8% with a sample standard deviation of monthly returns of 7.4%. A portion of the distribution table is displayed below:

	Significance level	
d_f	0.10	0.05
10	1.372	1.812
11	1.363	1.796
12	1.356	1.782

Assuming the returns are normally distributed and using a 10% confidence interval, should Emerson make the investment?

A. Yes.
B. No, because the hypothesized mean value falls within the confidence interval.
C. No, because the hypothesized mean value falls outside the confidence interval.

Correct Answer: A

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

The hypothesis test is stated as $H_0 : \theta \geq 4.5\%$ versus $H_a : \theta < 4.5\%$ and so this can be identified as a one-tailed hypothesis test.

The population variance is not known and therefore, a t-test is used with 12 – 1 = 11 degrees of freedom. The rejection points for this one-sided test are 1.363 and –1.363.

The test statistic is calculated as follows:

$$t_{11} = \frac{3.8 - 4.5}{7.4/\sqrt{24}} = -0.32769$$

Since the t-statistic does not satisfy either t > 1.363 or t < - 1.363, the null hypothesis is not rejected. This implies that the population mean monthly return of 4.5% is consistent with the 12-month observed data series and that the investor should invest in the commodity stock.

29. On a given trading day, a stock peaked at $41.23 before falling to $38.50. Two days later, the same stock's price rose to $41.21 after which it again started to decline. A stock market analyst identified the price pattern as a double-top.

Based on the identified pattern, the price target is *closest* to:

A. $35.79.
B. $41.21.
C. $41.23.

Correct Answer: A

Reference:
CFA Level I, Volume 1, Study Session 4, Reading 12, LOS d

Price target = $38.50 – ($41.21 – $38.50)
= $35.79

30. Forty years ago James Paul deposited a sum of funds in an investment fund with an expected annual return of 8%. If its current value is worth $44.5 million, Paul's original investment in the fund was *closest* to:

    A. $1.0 million.
    B. $2.0 million.
    C. $41.2 million.

    Correct Answer: B

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

    All $ figures are in millions
    FV = PV $(1 + r)^N$
    $44.5 = PV$(1.08)^{40}$
    PV = $2.048 or approximately $2.0

31. The management at South AM Enterprises has approved an exploration project which has met the IRR decision rule.

    Based on the decision taken, which of the following conclusions is *most likely* valid?

    A. The discount rate of the project is less than the IRR.
    B. The project will have no effect on shareholder's wealth.
    C. The IRR of the project is at least equal to its hurdle rate.

    Correct Answer: A

    Reference:
    CFA Level I, Volume 1, Study Session 2, Reading 6, LOS b.

Given that the management has agreed to undertake the project, the IRR of the project is greater than the opportunity cost of capital; the latter is used as a hurdle rate in the IRR decision rule. Since the opportunity cost of capital is less than the IRR, the NPV is greater than zero; using a discount rate less than the IRR will make the NPV positive.

The impact of a project on shareholder wealth is determined based on the NPV decision rule.

32. Graham Walsh, a fund manager, has complied performance results for a fund he is managing. He has summarized the results in the exhibit below:

January 1, 2012	$650,000
June 30, 2012 (Fund value)	$770,000
July 1, 2012 (Dividends received before additional investment)	$55,000
July 1, 2012 (Fund value)*	$855,000
December, 2012 (Dividends received)	$26,550
December 31, 2012 (Fund value)**	$920,000

*This includes a $30,000 capital investment in the fund.
**This does not include the dividends received on December 31, 2012.

Based on the complied information, the time-weighted rate of return is *closest* to:

A. 40.51%.
B. 41.54%.
C. 45.62%.

Correct Answer: A

Reference:
CFA Level I, Volume 1, Study Session 2, Reading 6, LOS d.

<u>January 1, 2012 to July 1, 2012:</u>
Holding period return = ($770,000 + $55,000 – $650,000)/$650,000 = 26.92%

<u>July 1, 2012 to December 31, 2012:</u>
Holding period return = ($920,000 + $26,550 – $855,000)/$855,000 = 10.71%
Time-weighted return = 1.2692 × 1.1071 – 1 = 40.51%

Questions 33 through 44 relate to Economics

33. Aerot is an aeronautical engineering firm operating in Ecadoria, a developing country. Aeronautical engineering is a fairly new arena in the country with the firm being the sole operator in its market. As a result, Aerot's management has free reign over the fees the firm charges for its services. It has been estimated that the amount of resources required in establishing an engineering firm such as Aerot is substantial. In addition, Aerot is heavily regulated due to the nature of services it offers.

    Which of the following statements is *most likely* correct regarding demand analysis in the aeronautical industry?

    A. Demand for Aerot's services is elastic.
    B. Average revenue is twice as large as the market demand schedule.
    C. The impact of a price decrease on marginal revenue is three times as large as that on marginal demand.

    Correct Answer: A

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

    Aerot operates in a monopoly market as evidenced by:

    - significant barriers to entry in the form of resources required to start-up and government regulation,
    - Aerot has significant pricing power,
    - there is no evidence of the existence of substitutes, and
    - Aerot is selling a highly differentiated product.

    A firm operating in a monopoly market has a negatively sloped demand function; that is, the demand for Aerot's services is elastic (consumer demand is responsive to price changes).

    In a monopoly market, average revenue is the same as the market demand schedule. The marginal revenue schedule is two times as large as the average demand schedule; this implies that the impact of a price decrease on marginal revenue is twice as large as that on marginal demand.

34. An industry comprises of thirty participants. Ten percent of the participants have a market share of ten percent each while twenty percent of the participants have a market share of five percent each. The Herfindahl-Hirshchman (HHI) index for the top five firms is *closest* to:

A. 0.030.
B. 0.035.
C. 0.050.

Correct Answer: B

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

The top 3 (10% × 30) participants have a market share of 10% each. The fourth and fifth largest participants have a market share of 5% each. The HHI is equal to $0.035 = [(0.1^2 \times 3) + (0.05^2 \times 2)]$.

35. Martha Lockwood is an analyst who has collected economic data with respect to a country in the exhibit below:

	$000
Net imports	35
Indirect business taxes less subsidies	95
Government spending on goods and services	150
Consumer spending on goods and services	42
Rental income	85
Interest income	25
Statistical discrepancy	8
Corporate and government enterprise profits before taxes	44
Transfer payments	21

The country's GDP and national income are *closest* to:

A. $157,000 and $78,000, respectively.
B. $165,000 and $249,000, respectively.
C. $235,000 and $228,000, respectively.

Correct Answer: B

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

All figures are in $'000s.

GDP = Government spending on goods and services + Consumer spending on goods and service + Statistical discrepancy – Net imports

GDP = 150 + 42 + 8 – 35 = 165

National income = Corporate and government enterprise profits before taxes + rental income + interest income + Indirect business taxes less subsidies
National income = 44 + 85 + 25 + 95 = 249

36. Littleton Enterprises operates in a monopoly market. The average cost is constant at $50, while marginal revenue and average revenue are equal to $65 and $70, respectively. Recent market analysis indicates that the price elasticity of demand is 1.8.

The price at which output will be maximized is *closest* to:

A. $112.50.
B. $146.25.
C. $157.50.

Correct Answer: B

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

In a monopoly market, marginal revenue = marginal cost. Therefore, optimal price is calculated by rearranging the following equation: $MR = P[1 – 1/E_P]$

$P = MR/[1 – 1/E_P] = \$65/[1 – 1/1.8] = \$146.25$

37. In 2011 the real GDP for a country was \$128.5 million while the GDP deflator was 125. In 2012 the real GDP was recorded at \$98.5 million. The GDP deflator required to maintain the same amount of nominal GDP as in 2011 is *closest* to:

    A. 104.37.
    B. 130.46.
    C. 163.07.

    Correct Answer: C

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

    Nominal GDP_{2011} = Real GDP × (GDP deflator/100)
    = \$128,500,000 × (125/100)
    = \$160,625,000

    To maintain the nominal GDP at \$160,625,000, the GDP deflator should equal 163.07 (\$160,625,000/\$98,500,000 × 100).

38. According to the aggregate demand curve, when holding nominal money supply constant, increasing the price level will *most likely* cause a decline in:

    A. real interest rates.
    B. real money supply.
    C. aggregate expenditures.

    Correct Answer: B

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

    Based on the aggregate demand curve, if the real money supply is held constant, an increasing price level will lead to a decline in real income, money supply and an increase in real interest rates. A higher price level will increase aggregate expenditures.

39. A higher real money supply will cause the IS and LM curves to intersect at a:

A. lower price level.
B. higher real interest rate.
C. higher level of real income.

Correct Answer: C

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

An increase in the real money supply will cause the LM curve to shift downward and to the right. In order to achieve equilibrium in the money market an increase in the real money supply will be balanced by an increase in money demand.

Money demand is an increasing function of real income and a decreasing function of real interest rates. Therefore, a higher money demand implies higher real income and lower interest rates.

The IS curve does not depend on the level of interest rates.

40. The exhibit below illustrates a segment of the consumption basket as well as prices between the months, January and February. The base value of the index is 100 and the base month is January 2013.

Exhibit:
Consumption Baskets and Prices, January-February 2013.

Date	January 2013		February 2013	
Goods	Quantity	Price	Quantity	Price
Wheat	150 kg	$0.25/kg	175 kg	$0.30/kg
Rice	45 kg	$1.50/kg	45 kg	$1.40/kg

The value of the Fisher index in February 2013 is *closest* to:

A. 102.86.
B. 103.34.
C. 106.37.

Correct Answer: B

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

Fisher index = $\sqrt{I_P \times I_L}$

$$I_p = \frac{(175 \times 0.30) + (45 \times 1.40)}{(175 \times 0.25) + (45 \times 1.50)} = \frac{115.50}{111.25} \times 100 = 103.82$$

$$I_L = \frac{(150 \times 0.30) + (45 \times 1.40)}{(150 \times 0.25) + (45 \times 1.50)} \times 100 = \frac{108.00}{105.00} = 102.857$$

Fisher index = $\sqrt{103.82 \times 102.857} = 103.34$

41. According to the concept of money neutrality, an increase in money supply will:

A. decrease aggregate price level in the long run only.
B. increase the real value of natural resources in the short run.
C. have no impact on the availability of capital and labor in the long run.

Correct Answer: C

Reference:
CFA Level 1, Volume 2, Study Session 5, Reading 19, LOS d.

According to the concept of money neutrality, increasing the money supply will increase aggregate price levels in the short and long run. In the short run an increase in money supply, and thus price levels, will decrease the value of currency, which in turn will affect the real value of things in the short run.

However, in the long run, doubling price levels and halving the value of currency will not affect the real value of things.

42. Martin Greene is a market analyst observing trading activities between Brazil and South Africa. South Africa exports industrial equipment to Brazil and imports coffee. With respect to industrial equipment, the output per worker per day in South Africa and Brazil is 6 and 2 units respectively. On average, a Brazilian worker processes 100 grams of coffee per day while the autarkic price of coffee in terms of a unit of industrial equipment in South Africa is 0.15.

    Which of the following statements is *most likely* correct?

    A. The cost of processing coffee is lower in South Africa.
    B. A Brazilian worker processes ten more grams of coffee relative to a South African worker.
    C. The opportunity cost of a unit of industrial equipment is 6.7 grams of coffee in South Africa.

    Correct Answer: B

    Reference:
    CFA Level 1, Volume 2, Study Session 6, Reading 20, LOS c.

    In Brazil the opportunity cost of a unit of industrial equipment is 50 grams (100/2) of coffee while the opportunity cost a gram of coffee is 0.02 (2/100) units of industrial equipment.

    In South Africa the opportunity cost of a unit of industrial equipment is 6.6667 grams (1/0.15), or approximately 6.7 grams, of coffee while the opportunity cost of a gram of coffee per unit of industrial equipment is equal to its autarkic price, 0.15. On average, a South African worker processes 40 grams of coffee per day (6/0.15). Having an absolute advantage, a Brazilian worker processes 10 more grams (50 – 40) of coffee relative to a South African.

    Based on the calculations, one can conclude that the cost of processing coffee is lower in Brazil.

43. The welfare loss under a quota is similar to a tariff if:

    A. quota rent is captured by a foreign exporter.
    B. the exporter shifts sales from the domestic to the export market.
    C. the government of the country capturing quota rent auctions import licenses for a fee.

Correct Answer: C

Reference:
CFA Level 1, Volume 2, Study Session 6, Reading 20, LOS e.

The welfare loss under a quota is similar to a tariff if the government of a country that imposes the quota can capture quota rents by auctioning import licenses for a fee.

If the foreign government or producer captures the associated rent, then the welfare loss to the importing country is greater than the tariff.

44. India manufactures 5.0 million television sets in a year while the domestic demand for sets is 5.8 million. As a result, the country will import 400,000 sets from abroad at world free trade prices. The global price of television set is $130. In response to the heightened demand for imported televisions, Indian authorities impose a tariff on the imports thereby raising the domestic price of a set to $150. Following the imposition of tariffs, domestic production increases to 5.2 million while quantity demanded declines to 5.3 million.

    The gain in government revenue arising from the imposition of the tariff is *closest* to:

    A. $2.0 million.
    B. $7.0 million.
    C. $102.0 million.

Correct Answer: A

Reference:
CFA Level 1, Volume 2, Study Session 6, Reading 20, LOS e.

Gain in government revenue = (Domestic price after imposing tariff – world free trade price) × (Domestic consumption* – domestic production*)

Gain in government revenue = ($150 – $130) × (5.3 million – 5.2 million) = $2 million.

*These represent the number of sets being consumed and produced, respectively, at the new domestic price.

Questions 45 through 68 relate to Financial Reporting and Analysis

45. Tara Scott is a finance officer at Westdale. Scott has collected selective financial information for the company (Exhibit).

Exhibit: Selective Financial Information for Westdale

	$ millions
Net book value	140
Contributed capital	38
Beginning retained earnings	102
Revenue	85
Expenses	69

The amount of dividends paid by Westdale is *closest* to (in millions):

A. 16.
B. 22.
C. 118.

Correct Answer: A

Reference:
CFA Level I, Volume 3, Study Session 7, Reading 23, LOS b.

All figures are in millions.

Assets = Liabilities + Contributed capital + Beginning retained earnings +

Revenue – Expenses – Dividends

Given that 'assets – liabilities = net book value',

Dividends = Net book value – contributed capital – beginning retained earnings – revenue + expenses

Dividends = Contributed capital + beginning retained earnings + revenue – expenses – net book value

Dividends = $38 + $102 + $85 – $69 – $140 = $16

46. Which of the following scenarios *most likely* explains an increase in receivables turnover?

A. A large number of customer accounts have defaulted and are written off.
B. A company has modified the terms of its credit policy from "3/10" to "3/15".
C. A company's sales have been adversely affected by new industry wide product regulations.

Correct Answer: A

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

The receivables turnover ratio is measured as credit sales/average receivables. An increase in the ratio can be attributable to a write-off of customer accounts. This decreases the denominator and hence increases the measure.

A decline in sales will result in a decline in the receivables turnover measure. The "3/15" credit policy being offered is more relaxed relative to the "3/10" policy; this is because customers can now avail the same discount rate if their payment is extended five additional days beyond the ten day discount window.

47. Two years ago Terrance Limited had undertaken a four-year construction project for a total sales price of $30 million. The project's total estimated building costs were $18 million. The company has already spent $4 million and $5 million in the first and second year, respectively. Terrance uses the percentage of completion method to recognize contract revenues.

Assuming no changes in estimated total costs, the amount of revenues recognized by Terrance Limited in each of the first two years is, respectively, *closest* to (in millions):

	First year:	Second year:
A.	$4.00	$5.00.
B.	$6.67	$8.33.
C.	$6.67	$15.00.

Correct Answer: B

Reference:
CFA Level I, Volume 3, Study Session 8, Reading 25, LOS b.

At the end of year 1, total costs to complete the project are \$14 million (\$18 million – \$4 million). The percentage of completion is 22.22% (\$4 million/\$18 million). Revenues recognized are equal to \$6.67 million (0.2222 × \$30 million).

At the end of year 2, the company has spent a cumulative amount of \$9 million (\$4 million + \$5 million). 50% (\$9 million/ \$18 million) of the project is complete. A cumulative revenue of \$15 million (50% × \$30 million) will be earned at the end of the year. However, since \$6.67 million is already recognized, the amount of revenues recognized in the year will equal to \$8.33 million (\$15.00 million – \$6.67 million).

48. An effective financial reporting system is transparent if it requires:

A. fair presentation.
B. similar transactions to be measured and presented in a similar manner.
C. the full spectrum of transactions that have financial consequences to be reported.

Correct Answer: A

Reference:
CFA Level I, Volume 3, Study Session 7, Reading 24, LOS g

A financial reporting system is transparent if users are able to see the underlying economics of the business reflected clearly in the financial statements. Full disclosure and fair presentation create transparency.

A system is comprehensive if it includes the full spectrum of transactions that have financial consequences.

A system is consistent if similar transactions are measured and presented in a similar manner.

49. The exhibit below highlights selective financial information for ABC Limited for the years 2012 and 2013.

Exhibit

$ millions	2013	2012
Total current assets	90	80
Total current liabilities	55	50
Total debt	115	127
Total equity	200	180

Based on the information presented, ABC Limited's financial risk has *most likely*:

A. increased.
B. decreased.
C. remained unchanged.

Correct Answer: B

Reference:
CFA Level I, Volume 3, Study Session 8, Reading 26, LOS i

Financial risk can be measured using the financial leverage ratio.

Financial leverage = total assets ÷ total equity

Financial leverage (2012) = ($180 + $127) million*/$180 million = 1.7056

Financial leverage (2013) = ($115 + $200)* million/$200 million = 1.5750

*Total liabilities + equity = total assets

A decline in the ratio signals a decrease in financial risk.

50. Which of the following items is *most likely* included in a company's other comprehensive income?

A. Changes in net assets
B. Foreign currency translation adjustments
C. Unrealized gains and losses on held for trading securities

Correct Answer: B

Reference:
CFA Level I, Volume 3, Study Session 7, Reading 25, LOS l.

Other comprehensive income includes gains and losses arising from the conversion of foreign currency items at current exchange rates.

While other comprehensive income includes items that have bypassed the income statement, 'comprehensive income' is defined under U.S. GAAP as the change in the net assets of the company that result from transactions other than investments from and distributions to owners. Changes in the net assets of a company include owner and non-owner sources while other comprehensive income includes the latter.

Unrealized gains and losses on held for trading securities are included directly in net income.

51. The exhibit below illustrates financial information summarized from a company's income statement and balance sheet for the financial years 2012 and 2013.

Exhibit

$ millions	2013	2012
Working capital (beginning)	40	35
Working capital (ending)	50	42
Revenue	120	100

The company ('s):

A. is utilizing its assets more efficiently.
B. ability to cover short-term obligations has improved.
C. ability to generate profits from its resources has improved.

Correct Answer: A

Reference:
CFA Level I, Volume 3, Study Session 8, Reading 28, LOS g.

Based on the information presented in the exhibit, the working capital turnover can be calculated; this measures the efficiency with which a company utilizes its assets.

Working capital ratio = Revenue/average working capital

Working capital ratio (2013) = $120/[($40 + $50)/2] = 2.67

Working capital ratio (2012) = $100/[($35 + $42)/2] = 2.60

The working capital ratio has improved by 2.69% (2.67/2.60 – 1). This indicates that the company is utilizing its assets more efficiently.

52. A company that issues stock dividends will *most likely* record the transaction:

A. as a financing activity in the cash flow statement.
B. as an operating activity in the cash flow statement.
C. in a supplementary note to the cash flow statement.

Correct Answer: C

Reference:
CFA Level I, Volume 3, Study Session 8, Reading 27, LOS b

The issuance of stock dividend reflects a non-cash transaction as a company issues shares in lieu of cash dividends. Non-cash transactions are not reported on the cash flow statement as a separate item but are disclosed in a separate note or a supplementary schedule to the cash flow statement.

53. For the year ended 31 December 2013 Aerox Limited reported net income of €2 million and paid common and preferred dividends of €30,000 and €42,000, respectively. Preferred dividends relate to 150,000 convertible preferred shares issued at the beginning of the year each convertible into two shares of the company's common stock. The company has an average of 300,000 shares of common stock outstanding.

Aerox's diluted EPS is *closest* to:

A. 3.21.
B. 3.33.
C. 6.53.

Correct Answer: B

Reference:
CFA Level I, Volume 3, Study Session 7, Reading 25, LOS g.

Diluted EPS =

$$\frac{Net\ income}{Weighted\ Avg.no.of\ shares\ o/s + new\ shares\ that\ would\ have\ been\ issued\ at\ conversion}$$

Diluted EPS = $\frac{\$2{,}000{,}000}{300{,}000+(150{,}000\times 2)} = 3.33$

54. Alliance is in the book publishing and printing industry. The company has incurred the following costs during the current financial year:

- The company paid $500,000 to acquire rights to distribute published work of three authors.
- Storage costs relating to unsold books totaled $100,000.
- Storage costs relating to paper and ink (for printing books) totaled $30,000.
- The company paid $40,000 to distribute published books to bookstores and libraries.

If Alliance complies with U.S. GAAP, the amount recognized as part of inventory is *closest* to:

A. $30,000.
B. $530,000.
C. $540,000.

Correct Answer: B

Reference:
CFA Level I, Volume 3, Study Session 10, Reading 29, LOS a

U.S. GAAP are similar to the IFRS in requiring all "costs of purchase, costs of conversion, and other costs in bringing the inventories to their present location and condition" to be included in inventory.

The $500,000 paid to acquire distribution rights will be recognized as part of inventory since the amount classifies as an acquisition cost.

Storage costs related to unsold books ($100,000) will not be recognized as part of inventory while storage costs related to paper and ink ($30,000) will be included in inventory; the latter are included as the amount relates to bringing inventory to its "present location and condition".

The $40,000 paid to distribute published books to bookstores and libraries will not be included as part of inventory as the amount does not classify as a cost of conversion, cost of purchase or costs directly related to the acquisition of goods, materials and services.

55. Which of the following financial consequences *most* accurately highlights a company's decision to reclassify property from the investment to owner occupied category based on the fair value model (assuming fair value is higher than depreciated cost)? The company will experience an increase in the:

A. net profit margin.
B. asset turnover ratio.
C. financial leverage ratio.

Correct Answer: C

Reference:
CFA Level I, Volume 3, Study Session 10, Reading 30, LOS k.

When investment property is reclassified from the investment to owner occupied category, it is treated as a revaluation and recorded at its fair value. An upwards revaluation is reflected by increasing total assets and the revaluation surplus (a component of equity).

The asset turnover ratio (sales/total assets) will decrease following an increase in total assets.

The net profit margin will remain unchanged as the revaluation gain will bypass the income statement.

The financial leverage ratio (total assets/total equity) will increase. Given that total assets are equal to the sum of total liabilities (and equity and that both assets and equity will increase by the same amount), total assets will continue to exceed total equity despite the revaluation.

56. Jade Associates operates in a country where the same depreciation method is used for both tax and financial reporting. The company has recently purchased an item of machinery with a useful life of ten years. Jade's management has projected annual quantity produced to be the same over the machine's useful life. The company would like to select a depreciation method that will minimize the amount it pays in taxes in the first few years of the useful life. Jade will *most likely* opt for the:

A. straight line method.
B. units-of-production method.
C. double declining balance method.

Correct Answer: C

Reference:
CFA Level I, Volume 3, Study Session 10, Reading 30, LOS c

Jade Associates will opt for the double declining balance method; this is because the method produced a higher depreciation charge and so a lower profit before tax in the earlier years of an asset's useful life. A lower profit before tax will translate into lower tax expense as well as taxes paid, given that profit before tax and taxable income will be affected in an identical manner.

57. RZX Limited purchased an automated paint mixer on January 1, 2010 for €300,000 with an estimated useful life of eight years and a salvage value of €20,000. The asset is depreciated on straight-line basis. On December 31, 2013, the mixer's fair value is determined as €250,000; the change in value is determined to be other than temporary. The present value of cash flows expected from the asset's continued use is €260,000. The costs to sell the asset in its current condition are €15,000.

Under IFRS, RZX would report:

A. a gain of €55,000 in equity.
B. an impairment loss of €62,500 in its income statement.
C. an impairment loss of €50,000 in other comprehensive income.

Correct Answer: A

Reference:
CFA Level I, Volume 3, Study Session 10, Reading 30, LOS g & h

According to IFRS, an asset is deemed to be impaired if the carrying amount is not recoverable and exceeds the recoverable amount (higher of fair value less costs to sell and value in use).

Carrying amount = €300,000 – (€35,000* × 3) = €195,000
*Annual depreciation charge = €(300,000 – 20,000)/8 = €35,000
Fair value less costs to sell = €250,000 – €15,000 = €235,000
Value in use = €260,000

The carrying value is lower than the recoverable amount of €260,000; thus, the asset is not considered impaired. Since the fair value exceeds carrying value by €55,000 (€250,000 – €195,000), the amount is recognized as a gain in revaluation surplus, an equity component.

58. Which of the following statements *most* accurately explains why a lessee will prefer a finance lease over an operating lease?

A. Profitability ratios are stronger.
B. Debt-to-equity ratios are lower.
C. Asset ownership is transferred at the end of the lease term.

Correct Answer: C

Reference:
CFA Level I, Volume 3, Study Session 10, Reading 32, LOS g

A finance lease is similar to buying an asset using external financing. Ownership of the leased asset is transferred to the lessee at the end of the lease term under this arrangement. On the other hand, operating leases are similar to renting an asset with no transfer of ownership.

In the case of finance lease, both depreciation and interest expense are recorded in a company's income statement. However, in the case of operating leases, only rental expense is recorded in a company's income statement. Therefore profitability and profitability ratios are stronger under the latter arrangement.

Reported debt-to-equity ratios are higher under finance lease due to two reasons:
1) a liability is created equal to the amount of the asset leased and
2) retained earnings are lower due to lower profit reported under this arrangement.

The effect of these two combines to increase debt-to-equity ratio.

59. Licardo Inc. resides in a country where the tax laws require a higher depreciation charge to be recorded as part of taxable income. Annual depreciation charges and asset values for accounting and tax purposes related to an item of machinery are summarized in the exhibit below. The statutory tax rate is 30%.

Exhibit:
Depreciation Charges & Equipment Values (2011-2013)

	2013	2012	2011
Equipment value for accounting purposes (carrying amount)(depreciation charge of $3,500 per year)	$13,000	$16,500	$20,000
Equipment value for tax purposes (tax base)(depreciation charge of $4,200 per year)	$10,900	$15,100	$19,300
Difference	$2,100	$1,400	$700

If the income tax rate is revised to 20% for 2013, which of the following statements is *most likely* correct?

A. Deferred tax liabilities will need to be increased by $210.
B. The benefit of the accelerated depreciation tax shield will be reduced to $420.
C. The reduction in income tax expense attributable to the change in tax rate is $140.

Correct Answer: C

Reference:
CFA Level I, Volume 3, Study Session 10, Reading 31, LOS e

The reduction in income tax expense attributable to the change in tax rate is $140 (30% - 20%)($1,400).

A decrease in the income tax rate will decrease the deferred tax liability reported in 2013 from $630 ($2,100 × 30%) to $420 ($2,100 × 20%) or by $210.

The benefit of the accelerated depreciation tax shield will reduce to $140 [($4,200 – $3,500) × 20%].

60. In the financial year 2012, Frax Crop recognized deferred tax assets of $120,000 in its balance sheet. At the start of 2013, finance manager George Knight reassesses the recoverability of the amount and determines that the 2012 estimate was too high and needs to be reduced by $10,000. Six months following Knight's adjustment, the original estimate proves to stand correct and the reduction is reversed.

The reversal of the $10,000 amount is *most likely* accounted for by:

A. reducing deferred tax assets.
B. increasing operating income.
C. recognizing a valuation allowance.

Correct Answer: B

Reference:
CFA Level I, Volume 3, Study Session 10, Reading 31, LOS g.

Given that the recoverability of the deferred tax asset was uncertain at the beginning of the year, Knight would have reduced deferred tax assets by $10,000 and created a valuation allowance of the same amount.

Six months later, the reversal of the valuation allowance will be reflected by increasing deferred tax assets and operating income.

61. On January 1, 2010, Yellow Inc. purchased a newspaper printing machine for \$500,000. On January 1, 2013 the accumulated depreciation related to the machine is \$187,500. At the beginning of 2013, the machine was revalued upwards by \$25,000 while annual depreciation expense (post revaluation) increased to \$70,000. Tax authorities do not permit revaluation gains to be recognized. Annual depreciation recognized for tax purposes is \$50,000. The applicable tax rate is 30%.

On December 31, 2013, Yellow's management will *most likely* increase:

A. retained earnings by \$7,500.
B. deferred tax assets by \$25,000.
C. revaluation surplus by \$25,000.

Correct Answer: B

Reference:
CFA Level I, Volume 3, Study Session 10, Reading 31, LOS h.

Given that revaluation is not recognized for tax purposes, its effect and any associated tax effects are accounted for in a direct adjustment to equity. The revaluation surplus is reduced by the tax provision associated with the excess of the fair value over the carrying value and it affects retained earnings, i.e. by \$7,500 (\$25,000 × 30%).

The deferred tax asset reflected in the balance sheet is the difference between the tax base and carrying value of the machine excluding the tax provision associated with the revaluation surplus (see below).

Carrying amount of machine = \$500,000 – \$187,500 + \$25,000 – \$70,000 = \$267,500

Tax base of machine = \$500,000 – (\$50,000 × 4) = \$300,000
Deferred tax asset = \$300,000 – \$267,500 – \$7,500* = \$25,000
*Tax effects associated with revaluation surplus (see above).

62. In a period of rising inventory costs and stable inventory quantities, which inventory accounting method will produce the highest:

	net profit margin?	current ratio?
A.	LIFO	LIFO
B.	LIFO	FIFO
C.	FIFO	FIFO

Correct Answer: C

Reference:
CFA Level I, Volume 3, Study Session 9, Reading 29, LOS h.

In a period of rising inventory prices, the FIFO method of inventory accounting will generate the lowest cost of goods sold as older, cheaper items are assumed to be sold first. With a lower cost of goods sold, gross profit and, consequently, reported net profit will be the highest relative to LIFO and the weighted average method. A higher net profit will translate into higher net profit margin (net profit/sales).

In a period of rising inventory costs, the FIFO method will produce a higher ending inventory balance (as inventory will comprise of recent, more expensive units). A higher ending inventory balance translates into a higher current ratio.

63. Bridge Corp reported interest expense of $4,500 for the year ended December 31, 2013. Cash interest paid during the year was $6,100 and the ending balance of the interest payable account was $12,500. Bridge Corp complies with U.S. GAAP.

The beginning balance of the interest payable account is *closest* to:

A. $10,900.
B. $14,100.
C. $23,100.

Correct Answer: B

Reference:
CFA Level I, Volume 3, Study Session 9, Reading 27, LOS f

Ending interest payable = Beginning interest payable + interest expense – cash paid for interest

Beginning interest payable = $12,500 – $4,500 + $6,100 = $14,100

64. On January 1, 2013 Trax Limited issues $3 million 10-year face value of bonds when the market interest rate is 5%. The bond pays interest of $210,000 annually on December 31.

Using the effective interest method, on December 31, 2013, Trax Limited will report:

A. $36,835 as interest income.
B. $210,000 as interest expense.
C. $3,426,469 as a long-term liability.

Correct Answer: C

Reference:
CFA Level I, Volume 3, Study Session 10, Reading 32, LOS b.

The sale proceeds (carrying amount of the liability at the beginning of the year) are $3,463,304 (see below).

FV = $3,000,000; I/Y = 5%; PMT = $210,000; N = 10
CPT PV = $3,463,304

Interest expense = $3,463,304 × 5% = $173,165

The interest payment is greater than the interest expense by $36,835 ($210,000 – $173,165) indicating that the bond is issued at a premium. The bond's carrying amount will decrease by the amount of premium and the liability reported on 31 December is $3,426,469 ($3,463,304 – $36,835).

65. Which of the following statements *most* accurately reflects a limitation of using ratio analysis?

A. Ratios cannot be used for time-series analysis.
B. Ratios enhance size differences between companies.
C. The use of different accounting policies may distort comparability.

Correct Answer: C

Reference:
CFA Level I, Volume 3, Study Session 9, Reading 28, LOS a

Differences in accounting policies can distort ratios and comparisons across time and between companies and therefore require financial adjustment.

Using ratios reduces the effect of size, which enhances comparisons between companies and over time.

An advantage of using ratio analysis is that they can be used to examine comparable performance over time and thus allow for conducting time-series analysis.

66. The exhibit below illustrates selective financial information for Delight for the financial years 2011-2013. The average number of days in a financial year is 365.

Exhibit

$ millions	2013	2012	2011
Cost of goods sold	345	280	200
Accounts payable	120	165	138

The change in Delight’s days of sales payable (DSP) *most likely* indicates:

A. sustainable growth.
B. an unsustainable boost to operating cash flows.
C. the company taking advantage of early payment discounts.

Correct Answer: C

Reference:
CFA Level I, Volume 3, Study Session 10, Reading 34, LOS b.

All $ figures are in millions

DSP = Accounts payable/cost of goods sold × 365

DSP (2013) = $120/$345 × 365 = 127 days

DSP (2012) = $165/$280 × 365 = 215 days

DSP (2011) = $138/$200 × 365 = 252 days

The DSP measure has slowed down indicating that the company is paying its vendors and that it may be taking advantage of early payment discounts.

67. On January 1, 2012 HR Enterprises sold industrial equipment and reported a profit of $35,000. Six years ago, the equipment was purchased for $200,000 with a $10,000 salvage value. The original useful life was eight years and the equipment is depreciated using the straight line method.

    The cash received upon the sale of equipment is *closest* to:

    A. $22,500.
    B. $57,500.
    C. $92,500.

    Correct Answer: C

    Reference:
    CFA Level I, Volume 3, Study Session 9, Reading 27, LOS f

    Annual depreciation charge = ($200,000 – $10,000)/8 = $23,750
    Net book value on January 1, 2012 = $200,000 – ($23,750 × 6) = $57,500
    Cash received on sale of asset = $57,500 + $35,000 = $92,500

68. Which of the following statements *most* accurately highlights the financial accounting of long-lived assets that are to be abandoned?

    A. They are not tested for impairment.
    B. They are depreciated until the final disposal date.
    C. Carrying values are replaced by fair values on the balance sheet.

Correct Answer: B

Reference:
CFA Level I, Volume 3, Study Session 9, Reading 30, LOS i.

Long-lived assets that are disposed off other than sale continue to be recognized at carrying value, are depreciated (unless the carrying amount falls to zero), and tested for impairment.

Questions 69 through 76 relate to Corporate Finance

69. A privately traded enterprise has an asset beta of 1.45. Increasing the degree of financial leverage will *most likely* produce an equity beta which is *closest* to:

A. 1.00.
B. 1.45.
C. 1.89.

Correct Answer: C

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 36, Pages 57, LOS i.

Based on the formula, an increase in financial leverage (D/E ratio) will increase the equity beta; this is because increasing the usage of debt will increase the degree of financial risk in a company's capital structure.
$B_{equity} = \beta_{asset}[1 + ((1 - t) \times D/E)]$

70. Which of the following statements *most accurately* demonstrates the correct treatment of floatation costs? Flotation costs:

A. associated with debt issuance are included in the cost of capital.
B. associated with equity issuance are included in the cost of capital.
C. are reflected by adjusting the net present value of the project it is intended to finance.

Correct Answer: C

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 36, Pages 66-67, LOS l

Flotation costs associated with the issuance of capital to finance are treated differently depending on the types of capital. In the case of debt capital and preferred stock, flotation costs are small and not typically incorporated into the cost of capital estimate.

In the case of equity securities, floatation costs are incorporated into the net present value estimate and not in the cost of equity estimate.

71. The capital budgeting process *least likely* includes:

A. post-auditing of recent investment results.
B. ensuring compliance with laws and regulations.
C. identifying projects which are attractive in isolation but undesirable strategically.

Correct Answer: B

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

The capital budgeting process does not concern reviewing compliance with laws and regulations.

Steps of the capital budgeting process include monitoring and post-auditing where recent investment results are compared to the target and any differences are explained.

Steps of the capital budgeting process include planning the capital budget; this stage includes scheduling and prioritizing projects as well as identifying projects that may look good in isolation but not strategically.

72. By selling 5% more units, Blue Top Limited has been able to enhance its net revenues without modifying the selling price per unit. In the previous year, Blue Top sold 200,000 units and generated revenue of $500,000. As a result of the change in revenue, operating income has increased by 8% in the current year. The variable cost per unit has remained unchanged from its $1.50 level from the previous year.

Blue Top's total fixed operating costs in the current year are *closest* to:

A. $78,750.
B. $183,750.
C. $300,000.

Correct Answer: A

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 37, LOS b.

Degree of operating leverage (DOL) is measured as the change in operating income resulting from the change in the number of units sold.

A 5% increase in units sold has increased operating income by 8%. This suggests that the DOL is 1.6 (8%/5%).

Quantity sold in the current year = 200,000 × 1.05 = 210,000

Selling price per unit (unchanged from previous year) = $500,000/200,000 = $2.50

Using the DOL formula, the fixed operating costs are calculated as follows:

$$\text{DOL} = \frac{Q(P-V)}{Q(P-V)-F}$$

$$1.6 = \frac{210{,}000(\$2.50-\$1.50)}{210{,}000(\$2.50-\$1.50)-F}$$

F = $78,750

73. The share repurchase method that does not obligate a company to complete the repurchase program is *most likely* known as:

  A. Dutch auction.
  B. buying in the open market.
  C. repurchase by direct negotiation.

Correct Answer: B

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 38, LOS c.

The most flexible method to repurchase shares involves buying them directly in the open market. Companies using this method have no legal obligation to undertake or complete the share repurchase program.

74. The management at Lockwood Associates has decided to undertake an external borrowing of $250,000 to finance the repurchase of company shares at the prevailing market price of $20. Lockwood has 2,000,000 shares outstanding before the repurchase and its after-tax cost of borrowing is 5.50%. The company's earnings yield is 6.00%.

The company's earnings per share (EPS) after the buyback is *closest* to:

A. $1.190.
B. $1.201.
C. $1.207.

Correct Answer: B

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 38, LOS d.

Pre-buyback earnings = 6.00% × 2,000,000 × $20 = $2,400,000

Earnings per share after buyback = (Earnings – after-tax cost of borrowing)/Shares outstanding

Earnings per share after buyback = [$2,400,000 – ($250,000 × 5.50%)]/1,987,500* = $1.201

*Shares after buyback = 2,000,000 – ($250,000/$20) = 1,987,500

75. A key aspect of the corporate governance definition is that it provides a framework which:

A. is legally binding.
B. is used as a performance benchmark.
C. delineates rights and responsibilities of various groups.

Correct Answer: C

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 40, LOS a.

Corporate governance is a system of internal controls and procedures by which companies are managed. It provides a framework which defines the rights, roles, and responsibilities of groups within an organization. Compliance with the codes is encouraged but not a legal requirement.

76. Yarrow Inc. is a real estate development firm that will be undertaking short-term borrowings of $800,000 to finance a one-month project. Yarrow's management is evaluating two alternative financing sources, a line of credit and commercial paper. Details concerning both financing plans are as follows:

Line of credit: A line of credit can be drawn down at 7.40% with a 1/4 percent commitment fee on the full amount. $1/12^{th}$ of the cost of the commitment fee is allocated to the first month.

Commercial paper: The interest cost is 7.50% with a dealer's commission of 1/12 percent and a backup line of credit of 1/5 percent both of which will be assessed when the commercial paper is issued.

Yarrow Inc. will *most likely*:

A. opt for a line of credit.
B. opt for commercial paper.
C. be indifferent between the two options.

Correct Answer: A

Reference:
CFA Level I, Volume 4, Study Session 11, Reading 39, LOS g.

Line of credit cost:

Line cost = $\frac{Interest+Commitmen\ fee}{Usabale\ loan\ amount} \times 12$

$= \frac{(\$800{,}000 \times 0.074 \times 1/12)+(0.0025 \times \$800{,}000 \times 1/12)}{\$800{,}000} \times 12 = 0.0765\ or\ 7.65\%$

Commercial paper cost = $\frac{Interest+Dealer's\ commission+Backup\ costs}{Net\ proceeds} \times 12$

$= \frac{(0.075 \times \$800{,}000 \times 1/12) + (0.00083 \times \$800{,}000 \times 1/12) + (0.002 \times \$800{,}000 \times 1/12)}{\$800{,}000 - (0.075 \times \$800{,}000 \times 1/12)} \times 12 =$

0.0783 or 7.83%

Questions 77 through 88 relate to Equity Investments

77. Vanessa Huge is a trader at a firm that manages a hedge fund. The fund invests in commodities such as natural gas. To hedge the risk associated with the investment the firm establishes a position whereby the instrument's risk exposure to its investment is negative.

    Which of the following positions has the firm *most likely* established to reduce exposure to the underlying risk?

    A. Short position in commodity puts.
    B. Long position in commodity futures.
    C. Short position in commodity futures.

    Correct Answer: C
    Reference:
    CFA Level 1, Volume 4, Study Session 13, Reading 45, LOS e

    Since the financial risk of the instrument is negatively correlated to commodity risk, establishing a short exposure to the underlying commodities is appropriate using a short futures position.

    A short position in commodity puts and a long position in commodity futures will establish a long exposure to the underlying; this will increase the firm's risk exposure.

78. Ali Mehmood has purchased 30 equity stocks with an average price per share of $25 by depositing 30% as initial margin for his investment portfolio. The maintenance margin is 25%. Ignoring commissions, at what price will Mehmood first receive a margin call?

    A. $17.50.
    B. $23.33.
    C. $25.00.

    Correct Answer: B

    Reference:
    CFA Level 1, Volume 4, Study Session 13, Reading 46, Page 42, LOS f

Initial equity per share = ($25 × 0.30) = $7.50

Margin call will take place when the market price, ‘P’, drops below the maintenance margin requirement of 25%. P is determined using the equation below:

($7.50 + P – $25)/P = 25%

P = $23.33

Therefore, the margin call will occur when the price drops below $23.33.

79. A Brazilian small-cap equity index comprises of five securities; A, B, C, D and E. In the base year the value of the index was 100. All the constituent securities have undergone a 3-for-2 split. The exhibit below illustrates constituent security prices and weights before the split.

Security	Price before split	Weight before split (%)
A	30.00	14.35
B	21.00	10.05
C	85.00	40.67
D	40.00	19.14
E	33.00	15.79
Total	209.00	100.00
Divisor	5.00	
Index value	41.80	

Based on the stock split, the divisor will be adjusted to:

A. 3.33.
B. 6.67.
C. 7.50.

Correct Answer: A

Reference:
CFA Level 1, Volume 5, Study Session 13, Reading 46, LOS c

To maintain the index value at 41.80, the divisor will need to be adjusted to 3.33 (139.34/41.80).

Security	Price after split (Price before split × 2/3)
A	20.00
B	14.00
C	56.67
D	26.67
E	22.00
Total	139.34

80. Blue-Top Associates' return on equity decreased by 12.0% from the 25.0% reported at the beginning of 2013. The company's book value of equity at the beginning and end of 2013 was \$15.0 million and \$26.3 million respectively. Net income reported for 2012 and 2013 was equal to \$1.1 million and \$1.8 million respectively.

Blue-Top Associate's reported return-on-equity for the year 2012 was *closest* to:

A. 7.67%.
B. 8.72%.
C. 9.76%.

Correct Answer: C

Reference:
CFA Level 1, Volume 4, Study Session 14, Reading 48, LOS h

$$ROE_{2013} = \frac{\$1{,}800{,}000}{(\$15{,}000{,}000 + \$26{,}300{,}000)/2} = 8.7167\%$$

$$ROE_{2012} = 8.7167\% \times (1 + 0.12) = 9.7627\%$$

81. A limitation of using business cycle sensitivities to classify entities is that:

A. placement in categories is somewhat arbitrary.
B. business cycle sensitivity is not adequately captured in weak economies.
C. investment opportunities cannot be determined by comparing two otherwise identical businesses operating in different demand environments.

Correct Answer: A

Reference:
CFA Level 1, Volume 4, Study Session 14, Reading 49, LOS b

A limitation of using this classification method is that business cycle sensitivity is a continuous spectrum and not an either/or issue and so the placement of companies in one of the two major groups is somewhat arbitrary.
Investment opportunities can be determined by comparing two otherwise identical businesses operating in different demand environments.

82. Martin Walsh has purchased 30,000 shares of a manufacturing concern at price per share of $15 by depositing 40% margin. One month later, the price rises to $18 and Walsh is required to pay an interest rate of 5% on the borrowed funds. The dividend per share is $0.05 and commission is paid at the rate of $0.04 per share at the time of purchase and sale.

The total return on the investment is *closest* to:

A. 29.54%.
B. 41.72%.
C. 42.00%.

Correct Answer: B

Reference:
CFA Level 1, Volume 4, Study Session 13, Reading 45, LOS f

Borrowed amount = 30,000 × 0.60 × \$15 = \$270,000
Equity investment = 30,000 × 0.40 × \$15 = \$180,000

Actual investment is higher as the buyer pays commission on the stock purchased.
Actual investment = \$180,000 + (\$0.04 × 30,000) = \$181,200

Initial investment	\$181,200
Purchase commission (\$0.04 × 30,000)	(1,200)
Trading gains/losses [(18 – 15) × 30,000)	90,000
Margin interest paid (\$270,000 × 0.05)	(13,500)
Dividends received (\$0.05 × 30,000)	1,500
Sales commission paid (\$0.04 × 30,000)	(1,200)
Remaining equity	256,800

Return on initial investment = [(\$256,800 – 181,200)/181,200] × 100 = 41.72%

83. Markets that are semi-strong form efficient:

A. are not necessarily weak-form efficient.
B. render fundamental analysis unnecessary.
C. are likely to perform better when passive portfolio management is employed.

Correct Answer: C

Reference:
CFA Level 1, Volume 4, Study Session 13, Reading 47, LOS e

Passive portfolio management is likely to outperform active management when markets are semi-strong efficient. This is because active trading is not likely to generate abnormal returns. Without being able to beat the market on a consistent basis, active portfolio management is the costly alternative for traders.

Markets that are semi-strong efficient are weak-form efficient. Fundamental analysis supports semi-strong efficient markets because it helps market participants understand the value implication of information.

84. North Atlantic reported the following figures during the financial year 2013:

Current dividend per share	$0.85
Forecasted earnings per share	1.20
Earnings growth rate (%)	4.5%
Required rate of return	9.3%

Based on the data presented, the justified forward price-to-earnings ratio is *closest* to:

A. 14.76.
B. 15.42.
C. 17.73.

Correct Answer: B

Reference:
CFA Level 1, Volume 4, Study Session 14, Reading 50, LOS h.

$$\frac{P_0}{E_1} = \frac{D_1 / E_1}{r - g} = \frac{(0.85 \times 1.045)/1.20}{0.093 - 0.045} = 15.42$$

85. In contrast to commercial classification systems, current systems:

A. are reviewed more frequently.
B. distinguish between different business categories.
C. may not employ peer group as the narrowest classification unit.

Correct Answer: C

Reference:
CFA Level 1, Volume 4, Study Session 14, Reading 49, LOS b

A limitation of current systems is that the narrowest classification unit cannot be assumed to be its peer group thereby losing out on valuable information gained from analyzing the company's performance and its relative valuation.

Unlike commercial classification systems, current systems are reviewed less frequently and do not distinguish between small and large businesses, between for-profit and not-for-profit organizations, or between public and private companies.

86. The EPS and DPS measures reported by ZRT Enterprises over the most recent three years have been summarized by the company's financial analyst, Raul Gibbons. Also included in the exhibit are his forecasts for the two measures over the next three years.

Year	DPS ($)	EPS ($)
6	6.9*	7.2*
5	5.6*	8.9*
4	5.1*	7.8*
3	4.5	6.1
2	4.2	5.4
1	3.9	5.0

*Forecasted EPS and DPS measures

In estimating ZRT's intrinsic value at the end of third year, Gibbons employs the company's required rate of return of 17.50%. He estimates the company's growth rate as 15.31% and derives an intrinsic value of $313.64.

Gibbons' calculations are *most likely*:

A. correct.
B. incorrect with respect to the intrinsic value only.
C. incorrect with respect to the growth rate and intrinsic value.

Correct Answer: B

Reference:
CFA Level 1, Volume 4, Study Session 14, Reading 50, LOS e

Growth rate, 'g': $4.5\ (1 + g)^3 = 6.9$

$g = 15.31\%$

Intrinsic value = $(4.5 \times 1.1531)/(0.175 - 0.1531) = \$236.94$

Based on Gibbons' calculation he is only correct with respect to his calculation of the growth rate and incorrect with respect to intrinsic value.

87. The asset-based approach to valuation can be applied to companies:

A. which are to be liquidated.
B. with a sizeable amount of intangibles.
C. operating in a hyperinflationary economic environment.

Correct Answer: A

Reference:
CFA Level 1, Volume 4, Study Session 14, Reading 50, LOS j

The asset-based approach to valuation can be used to value companies which are not going concerns and are to be liquidated. It is, however, not applicable when difficult to value intangible assets represent a large proportion of corporate assets.

Additionally, in hyperinflationary economic environments, the asset value is not readily determinable which makes this approach difficult to employ.

88. The exhibit below illustrates the price-to-sales (P/S) ratios for Levine, Tractor Inc. and Repo relative to industry averages; all three companies operate in different industries.

P/S ratio	Levine	Tractor Inc	Repo
Company	34.6	45.1	78.9
Industry Average	25.8	34.5	62.9

Based on the method of comparables, which company appears to be *most* overvalued?

A. Repo
B. Levine
C. Tractor Inc.

Correct Answer: B

Reference:
CFA Level 1, Volume 4, Study Session 14, Reading 50, LOS g

Levine is the most overvalued relative to its industry average. Levine is overvalued by 34.1% (34.6/25.8 – 1) relative to its industry average.

Tractor Inc. is 30.7% (45.1/34.5 – 1) overvalued relative to its industry average.

Repo is 25.4% (78.9/62.9 – 1) overvalued relative to its industry average.

Questions 89 through 94 relate to Derivatives

89. The maximum profit from the protective put strategy is:

    A. infinite
    B. original underlying price plus the option premium.
    C. exercise price minus the original underlying price plus option premium.

    Correct Answer: A

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

    The maximum profit from the protective put strategy is infinite.

90. A call option is selling for $8 in which the exercise price is $100. If the price of the underlying at expiration is 110, the value of the call option for the seller is *closest* to:

    A. $8
    B. -$2
    C. -$10

    Correct Answer: C

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

    For the call seller the value of the option = $-c_T = -\max(0, S_T - X)$
    $= -\max(0, 110 - 100) = -10$

91. In contrast to forward commitments, contingent claims:

    A. are not legal in nature.
    B. provide the right but not the obligation to buy or sell the underlying.
    C. provide the obligation but not the right to buy or sell the underlying.

    Correct Answer: B

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

Contingent claims provide the right but not the obligation to buy or sell the underlying at the predetermined price. Contingent claims represent derivative contracts which are recognized by the legal system as commercial contracts with each party expected to be upheld and supported by the legal system. In contrast, forward commitments obligate parties to buy or sell the underlying at the contractually agreed upon price.

92. Arbitrage opportunities *least likely* exist when:

A. markets are efficient.
B. there are no short selling restrictions.
C. the same asset is not selling at the same price in different markets.

Correct Answer: A

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

For arbitrage to be feasible there should be no restrictions on buying and selling assets. If the same asset is selling for different prices in two different markets and there is no restrictions on short sales, arbitrageurs will buy the lower priced asset and sell the higher priced asset until the prices of two assets are equivalent.

The principle of arbitrage is based on the law of one price; that is, the same asset will sell for the same price in different markets therefore whenever there is price difference of same asset in different markets arbitrage opportunities exist.

Markets that are relatively efficient do contain any arbitrage opportunities; this is because it is not possible to consistently earn abnormal returns in such markets. Arbitrage profits are examples of these abnormal returns.

93. A party terminating a forward contract by engaging in an offsetting forward contract prior to expiration will be exposed to credit risk if the counterparty to the two contracts is:

A. different.
B. the same.
C. either same or different.

Correct Answer: A

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

Prior to expiration, a party can terminate its position in a forward contract by taking an offsetting position in another contract with the same underlying asset and expiration date.

If the offsetting contract is undertaken with the same counterparty as the original contract, there will be little to no risk of default. However, if the contract is undertaken with a counterparty which differs from the original contract the risk of default is higher as the forward contract will be undertaken with a new and possibly unknown party.

94. Which of the following is *least likely* an example of contingent claims?

A. Options
B. Convertible bonds
C. Forward-rate agreement

Correct Answer: C

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

Forward-rate agreement is an example of a forward commitment.

Convertible bonds and options are examples of contingent claims. In a convertible bond, the holder is given the option to convert the bond into the company's common stock when the market price movements are favorable and there is no exposure of the risk of unfavorable movements. Therefore, it can also be classified as a contingent claim.

Questions 95 through 106 relate to Fixed Income

95. Vortex Inc. has issued three bonds in the current year; a fixed rate corporate bond, floating rate note, and a zero-coupon bond. The LIBOR at the time of issue was 3.25% and the LIBOR over the first, second and third quarter is forecasted at 4.20%, 5.00% and 5.90% respectively. Details concerning the coupon structures of the three bonds are summarized in the exhibit below:

Exhibit:
Coupon Structures of the Three Issues

Bond Issue	Coupon Rate	Coupon Payment Frequency	Purchase Price
Fixed-rate bond	LIBOR + 0.25%	Quarterly	$980
Floating rate note	LIBOR + 0.10%	Quarterly	$1,000
Zero-coupon bond	N/A	N/A	$930

Assuming forecasts materialize, which issue has the highest interest payment in the second quarter?

A. Fixed-rate bond
B. Floating-rate note
C. Zero-coupon bond

Correct Answer: B

Reference:
CFA Level I, Volume 5, Study Session 15, Reading 51, LOS a

In the second quarter, the fixed rate bond will make an interest payment of $8.75 [(0.0325 + 0.0025) × 1,000 × 1/4].

Interest payment by floating-rate note = (0.042 + 0.001) × $1,000 × 1/4 = $10.75

The zero-coupon bond will not make any interest payments over the life of the bond.

Hence, the floating-rate bond will make the highest interest payments in the second quarter.

96. Credit migration risk is best described as the risk that a bond (‘s):

A. yield spread may increase.
B. creditworthiness may decline.
C. issuer is unable to make interest and principal payments on a timely basis.

Correct Answer: B

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

Credit migration risk is the risk that a bond issuer’s creditworthiness deteriorates or migrates lower leading investors to believe that default risk is higher and causing the yield spreads on bonds to widen and prices to fall.

Credit or default risk is the risk that an issuer is unable to make interest and principal payments on a timely basis.

97. The exhibit below illustrates data concerning two, one-year, floating rate notes (A and B) which pay the three-month LIBOR plus 0.25%. The current 3-month LIBOR is 1.50%.

Exhibit:
Details Concerning A and B

	A	B
Required yield spread (basis points)	30	40
Discount rate per period	0.4500%	0.1375%

Which of the following statements is *most likely* correct concerning A and B (using an n/12 day convention where applicable and assuming *N* evenly spaced periods to maturity)?

A. A is selling at discount.
B. B is selling at discount.
C. Both notes are selling at a premium.

Correct Answer: A

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

The calculations below demonstrate that A is selling at discount and B is selling at a premium.

Based on the data presented, the discount rates per period and prices of the two floating rate notes (A and B) are calculated as follows:

Interest payments (A and B) = $\frac{(Index+QM)\times FV}{m} = \frac{(1.50\%+0.25\%)\times 100}{4} = 0.4375$

Price (A) = $\frac{0.4375}{(1+0.0045)} + \frac{0.4375}{(1+0.0045)^2} + \frac{0.4375}{(1+0.0045)^3} + \frac{0.4375+100}{(1+0.0045)^4} = 99.95$

Price (B) = $\frac{0.4375}{(1+0.001375)} + \frac{0.4375}{(1+0.001375)^2} + \frac{0.4375}{(1+0.001375)^3} + \frac{0.4375+100}{(1+0.001375)^4} = 101.20$

98. A covered bond is one that:

A. carries a higher yield relative to similar securitized bonds.
B. carries lower credit risk relative to similar securitized bonds.
C. offers bondholders additional protection by permitting recourse against the financial institution and SPV in the event the former defaults.

Correct Answer: B

Reference:
CFA Level I, Volume 5, Study Session 15, Reading 51, LOS d

A covered bond offers bondholders recourse against both the issuing financial institution and underlying cover pool.

However, bondholders have no recourse against the SPV (to which the financial institution transfers the assets backing the bonds) and its pool of assets because the SPV is bankruptcy remote.

Covered bonds carry lower credit risk and offer lower yields relative to otherwise similar securitized bonds; this is because if the assets included in the covered pool become non-performing, the issuer is required to replace them with performing assets (thus serving as a form of collateral and lowering credit risk).

99. Aola Inc issued a 5-year convertible bond with a par value of $1,000 trading at a premium of 105 per 100 of its par value. The issue is convertible into common shares at a price of $37. The market price of an Aola Inc common share is currently is $33.

Does the parity condition hold?

A. Yes.
B. No, the condition is above parity.
C. No, the condition is below parity.

Correct Answer: B

Reference:
CFA Level I, Volume 5, Study Session 15, Reading 51, LOS f

Conversion parity occurs if the conversion value is equal to the convertible bond's price.

Conversion value = Current share price × conversion ratio
Conversion ratio = Par value/conversion price = $1,000/$35 = 28.57:1
Conversion value = $33 × 28.57 = $942.86

Given that the convertible bond's price ($1,050) is greater than the conversion value ($942.86), the bond is selling at a conversion premium; this condition is above parity.

100. Secondary bond markets:

A. facilitate direct trading between investors.
B. have a significant presence of retail investors.
C. are structured as organized exchanges but never as over-the-counter.

Correct Answer: A

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

Trading in secondary bond markets can occur directly between investors or through a broker or dealer.

Unlike secondary equity markets, the presence of retail investors is relatively low in secondary bond markets.

Secondary bond markets can be structured as either an organized exchange or over-the-counter market.

101. A 5-year corporate bond issued by Stanley Corp with a 6.25% coupon trades at a yield of 5.80%. Due to a recent heavy supply of new bond issues, the yield offered on the bonds instantaneously increases to 6.40%. The bond has a modified duration of 3.8 and its convexity is 41.5.

Taking into account convexity, the return impact arising from the change in yield is *closest* to:

A. (2.21%).
B. (0.57%).
C. + 2.35%.

Correct Answer: A

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

Return impact = $-(\text{MDur} \times \Delta\text{Spread}) + 1/2\text{Cvx} \times (\Delta\text{Spread})^2$
$= -[3.8 \times (6.40\% - 5.80\%)] + (0.5)(41.5)(6.40\% - 5.80\%)^2$
$= -0.0221$ or -2.21%

102. Effective duration is essential to measuring interest rate risk of a bond with an embedded call option because:

A. it has a well-defined yield-to-maturity.
B. it is measured as sensitivity to changes in the yield-to-worst.
C. future cash flows are contingent on the path of future interest rates.

Correct Answer: B

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

Effective duration is essential to measuring the interest rate risk of a bond with an embedded call because duration is not sensitivity to changes in the yield-to-worst. In the case of callable bonds, future cash flows are uncertain and contingent on the path of future interest rates; the issuer's decision to call the bond and the resulting cash flows depends on the ability to refinance debt at a lower cost of funds. Thus callable bonds do not have a well-defined internal rate of return (yield to maturity).

103. Rodale Tech purchases a 4-year, 6% annual coupon payment corporate bond issue at a price of 93.3757 per 100 of par value. The issue is trading a yield-to-maturity of 8% at the time of issuance and this rate is expected to remain unchanged. All coupon payments are reinvested at the yield-to-maturity.
If Rodale Tech sells the bond after three years, the resulting capital gain (loss) will be *closest* to:

A. ($1.85).
B. $4.77.
C. $24.25.

Correct Answer: B

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

After three years, the bond has one year remaining till maturity, the sale price of the bond is 106/1.08 = 98.1481
Capital gain = 98.1481 – 93.3757 = 4.7724

104. A company that has two issues outstanding has declared bankruptcy. Both issues are equivalent in seniority ranking with Issue A being due in 15 years and Issue B in 30 years.

Which of the following statements is *most likely* correct regarding recovery of the two issues?

A. Issue A will be the first to be repaid.
B. Issue B will be the first to be repaid.
C. Both issues will be ranked pari passu in right of payment.

Correct Answer: C

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

Since both issues are equal in ranking, they will be ranked pari passu (on an equal footing) in right of payment regardless of their term to maturity; this implies that both creditors will have the same pro rata claim in bankruptcy and either issue will not have seniority over the other when redeeming their claim.

105. Mark Ronald is a fixed-income investor evaluating two corporate bond issues, A and B. She would like to determine which issue offers the highest yield-to-maturity based on quarterly compounding. She has summarized details with respect to the two issues in the exhibit below:

Exhibit:
Details Concerning Bond Issues A and B

	A	B
Term (years)	3	5
Annualize yield-to-maturity(%)	6	6
Coupon payment frequency	Monthly	Semi-annually

Based on quarterly compounding, Ronald will conclude that:

A. issue A offers a higher yield.
B. issue B offers a higher yield.
C. both issues offer the same yield.

Correct Answer: A

Reference:
CFA Level I, Volume 5, Study Session 15, Reading 54, LOS f

Issue A offers the highest yield on a quarterly compounded basis.
Converting Issue A's annualized yield-to-maturity to a quarterly basis yields 6.030%:

$$\left(1+\frac{0.06}{12}\right)^{12}=\left(1+\frac{APR}{4}\right)^{4}=0.06030$$

Converting Issue B's annualized yield-to-maturity to a quarterly basis yields 5.96%:

$$\left(1+\frac{0.06}{2}\right)^{2}=\left(1+\frac{APR}{4}\right)^{4}=0.05956$$

106. Kayak Inc. has three outstanding bond issues; A, B and C.

- Issue A is priced at a premium to par and has a longer time-to-maturity relative to issues B and C but a lower coupon rate relative to issue C.
- Issue B is priced at a discount to par and has a longer time-to-maturity and higher coupon rate relative to issue C. B's coupon rate is lower relative to its yield.
- Issue C is priced at par.

The duration measure will be the lowest for issue:

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

Correct Answer: B

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

A long time-to-maturity will increase the duration measure. This is always true for bonds issued at a premium or at par. For bonds issued at a discount, a longer time-to-maturity can decrease the duration statistic particularly when the coupon rate is low relative to the yield. Additionally, a higher coupon rate or higher duration will usually reduce the duration statistic.

Issue A has the longest time-to-maturity and is priced at a premium to par. The issue has the lowest coupon as the rate being offered is lower than issue C, which in turn offers a coupon rate lower than issue B. Therefore with the longest time-to-maturity, premium to par pricing, and lowest coupon rate on offer, issue A will have the highest duration measure.

Issue B has the lowest duration measure because it is priced at a discount to par, has a time-to maturity which is longer relative to C, quotes a coupon rate which is lower relative to its yield yet offers the highest coupon rate.

Questions 107 to 112 relate to Alternative Investments

107. The Gray Fund is a venture capital fund, which is financing Ray Tech's production plant expansion. Ray Tech has one operational plant and commercially sold its first product six months ago. The company's chief executive has shared his intent of undertaking an IPO with a year's time with Gray's chief investment officer.

     Ray Tech is *most likely* receiving:

     A. later-stage financing.
     B. early stage financing.
     C. mezzanine-stage financing.

     Correct Answer: A

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

     Later-stage financing is provided to companies that have commenced commercial production and sales but have not yet undertaken an IPO. Funds can be used to initially expand a company or for major expansion such as that of a plant.

     Early stage financing is provided to companies that are moving towards (but are yet to commence) commercial production and sales. This type of financing may be provided to initiate commercial production and sales. Ray Tech is already commercially selling its products and the type of financing provided does not fit this classification.

     Mezzanine-stage financing is provided to companies that are preparing to go public. Ray Tech's chief executive has only shared his intent to take the company public and so the financing received for the fund does not fit this classification.

108. Tickworth Associates is an asset management firm that manages the hedge fund, VAC. The fund has implemented a quantitative directional strategy for managing its equity investments.

Which of the following statements is *least likely* correct concerning the implemented strategy? VAC (‘s):

A. maintains a market risk neutral position.
B. long/short positions vary depending on the anticipated direction of the market.
C. employs a combination of technical and fundamental analysis to identify overvalued securities.

Correct Answer: A

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

Quantitative strategies establish a net long/short position. Market neutral strategies attempt to establish a net position which is neutral to market risk. These strategies use technical analysis to identify companies which are under- and overvalued. These strategies may employ fundamental analysis to establish long/short positions.

The fund varies its level of net long/short exposure depending upon the anticipated direction of the market and stage in the market cycle.

109. Investors selecting fund of funds over single hedge funds should expect:

A. shorter lockup periods.
B. attractive fee structures.
C. no need to conduct due diligence.

Correct Answer: A

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

Funds of funds negotiate favorable redemption terms; thus, investors should expect to see a reduction in lockup periods.

An advantage of fund of funds over single layer hedge funds is that they provide greater due diligence. A fund of funds manager will provide greater expertise in conducting due diligence. However, this does not mean investors are relieved from conducting due diligence. Because of the additional layers, fund of funds' mangers typically charge an additional layer of fees.

110. Capital Inc. maintains a hedge fund that is invested in infrequently traded convertible bonds. Based on the information provided, Capital Inc. will value its assets using:

   A. average quotes.
   B. estimated model values with haircuts.
   C. bid prices for longs and ask prices for shorts.

Correct Answer: B

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

An issue with convertible bonds is that they can be relatively illiquid. Given that these bonds are infrequently traded, quoted market prices will not be available. Therefore values may need to be estimated using statistical models as well as adjusted for liquidity discounts or haircuts.

Since quoted market prices will not be available, average quotes or bid and ask prices cannot be used for valuation purposes.

111. A hedge fund with $80 million of initial investment has 2 and 20 fee structure where the 2% management fees is charged at year-end and. What is an investor's effective return if the value of the capital at year end is $108 million, assuming both fees are calculated independently?

   A. 25.30%
   B. 25.84%
   C. 26.45%

Correct Answer: A

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

Management Fees = $108 million × 2% = $2.16 million

Incentive Fees = ($108 - $80) million × 20% = $5.6 million

Total Fees = ($2.16 + $5.6) million = $7.76 million

Investor return = ($108 - $80-$7.76)/$80 = 25.30%

112. Commodity swaps contracts:

A. are obligations to buy or sell a specific amount of a given commodity at a fixed price, location, and date in the future.
B. are agreements to exchange streams of cash flows between two parties based on future commodity or commodity index prices.
C. are rights to buy or sell a specific amount of a given commodity at a specified price and delivery location on or before a specified date in the future.

Correct Answer: B

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

Commodity futures and forwards are obligations to buy or sell a specific amount of a given commodity at a fixed price, location, and date in the future.

Commodity Swaps contracts are agreements to exchange streams of cash flows between two parties based on future commodity or commodity index prices.

Commodity Options give their holders the rights to buy or sell a specific amount of a given commodity at a specified price and delivery location on or before a specified date in the future.

Questions 113 through 120 relate to Portfolio Management

113. The investment policy statement sections that are *most closely* linked to the client's needs and are important from planning perspective are those dealing with:

  A. investment objectives and investment guidelines.
  B. investment guidelines and investment constraints.
  C. investment objectives and investment constraints.

  Correct Answer: C

  Reference:
  CFA Level 1, Volume 4, Study Session 12, Reading 43, LOS e

  The IPS sections that are most closely linked to the client's needs, and probably the most important from a planning perspective, are those dealing with investment objectives and constraints.

114. Which of the following statements *correctly* explains the required return of an asset if its beta is negative?

  The required return of the asset will be:

  A. less than the risk free rate and the asset will reduce the risk of the overall portfolio.
  B. equal to the risk free rate and the asset will reduce the risk of the overall portfolio.
  C. less than the market return but will be greater than the risk free rate and the asset will increase the overall return of the portfolio and will provide diversification benefits.

  Correct Answer: A

  Reference:
  CFA Level 1, Volume 4, Study Session 12, Reading 43, LOS e

  If an asset's beta is negative, the required return will be less than the risk free rate When combined with the market, the asset will reduce the risk of the overall portfolio.

115. Vaughn Reid is an independent investor with portfolio details shown in exhibit below. He withdraws a fixed $40,000 each year from his investment portfolio. Inflation rate is 4% and is maintained at its historical level. The applicable tax rate is 30%.

Exhibit:
Data Concerning Reid's Investment Portfolio

Year	Asset Base	Net return
1	$425,000	14%
2	$530,200	3%
3	$615,650	18%

The after-tax real return earned by Reid in the third year is *closest* to:

A. 8.27%.
B. 9.42%.
C. 12.60%.

Correct Answer: A

Reference:
CFA Level 1, Volume 4, Study Session 12, Reading 42, LOS a

The after-tax nominal return in the third year is equal to 12.6% [18% × (1 – 0.3)]. Inflation reduces this return by 4% so the after-tax real return is 8.27%.
After-tax real return = $\frac{(1+0.126)}{(1+0.04)} - 1 = 0.082692$ or 8.27%

116. Which of the following statements concerning the capital market line (CML) is *most likely* correct?

A. The slope intersects the y-axis at the point of origin.
B. Points above the CML represent desirable portfolios.
C. As the amount of investment devoted to the market portfolio increases, expected return and risk will increase.

Correct Answer: C

Reference:
CFA Level 1, Volume 4, Study Session 12, Reading 43, LOS b

As a greater amount is invested in the market portfolio, an investor moves up the capital market line and should expect to see an increase in expected return and risk.

The CML is a straight line that intersects the y-axis at a point equal to the risk-free rate of return.

Points located above the CML represent unachievable (inefficient) investments as they provide lower expected return for the same level of risk.

117. An example of nonsystematic risk *least likely* includes:

A. a rise in interest rates.
B. a rise in the price of yarn.
C. discovery of a major oil reserve.

Correct Answer: A

Reference:
CFA Level 1, Volume 4, Study Session 12, Reading 43, LOS c

Nonsystematic risk is risk that is particular to a particular company or industry but does not affect assets outside that asset class. Discovery of a major oil reserve or a rise in the price of yarn will directly affect their respective companies and industries but will have no effect on assets far removed from the industry.

On the other hand, a rise in interest rates will affect the market as a whole.

118. The exhibit below summarizes details concerning securities A, B and C which are trading in the same market:

Exhibit:
Details Concerning Securities A, B and C

	Annualized Standard Deviation	Correlation with the Market
Security A	7.5%	1.5
Security B	8.6%	0.6
Security C	9.1%	0.9
Market	5.2%	1.0

The security with the lowest market risk is *most likely*:

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

Correct Answer: B

Reference:
CFA Level 1, Volume 4, Study Session 12, Reading 43, LOS e

Market risk is measured using beta. The security with the lowest market risk is security B.

$$\beta_A = \frac{1.5(0.075)(0.052)}{(0.052)^2} = 2.163$$

$$\beta_B = \frac{0.6(0.086)(0.052)}{(0.052)^2} = 0.9923$$

$$\beta_C = \frac{0.9(0.091)(0.052)}{(0.052)^2} = 1.5750$$

119. The exhibit below illustrates historical return data for a small-cap stock over a five year period.

Exhibit:

Year	Return (%)
1	14.5
2	15.2
3	23.1
4	- 6.5
5	13.0

The geometric annual mean return for the stock is *closest* to:

A. 11.4%.
B. 11.9%.
C. 14.3%.

Correct Answer: A

Reference:
CFA Level 1, Volume 4, Study Session 12, Reading 42, LOS a

Geometric mean return =
$\sqrt[5]{(1+0.145)\times(1+0.152)\times(1+0.231)+(1-0.065)\times(1+0.130)}=0.11399$ or 11.4%

120. Investors would like to create leveraged positions by borrowing to invest more in the market portfolio. As a consequence, the capital market line will:

A. become curved even if funds are borrowed at the risk-free rate.
B. remain a straight line regardless of the rate at which funds are borrowed.
C. become curved if investors borrow at a rate higher than the risk-free rate.

Correct Answer: C

Reference:
CFA Level 1, Volume 4, Study Session 12, Reading 43, LOS b

It is possible for investors to create leveraged positions using the market portfolio and risk-free asset. The investor is required to borrow more to invest in the market portfolio to create such a position. If the borrowing rate is the risk-free rate, the capital market line will continue to remain a straight line. However, if the investor is borrowing at a rate higher than the risk-free rate, the capital market line will become the curved capital market line.