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Questions 1~27 Relate to Ethical and Professional Standards**1. Correct answer: A.**

A is correct. The CFA Institute Code of Ethics and Standards of Professional Conduct are designed to foster and reinforce a culture of responsibility and professionalism. The Code and Standards apply to all members and candidates regardless of title, position, occupation, geographic location, or specific situation, and they apply to all professional activities of investment professionals.

B is incorrect. The CFA Institute Code of Ethics and the Standards of Professional Conduct are not designed to foster and reinforce a culture of regulatory compliance.

C is incorrect. The CFA Institute Code of Ethics and the Standards of Professional Conduct are not designed to foster and reinforce a culture of service to the firm.

2. Correct answer: B.

B is correct. An ethical decision-making framework helps a decision maker see the situation from multiple perspectives, not just from her personal perspective, and pay attention to aspects of the situation that may be less evident if a short-term, self-focused perspective is applied.

A is incorrect because an ethical decision making framework helps a decision-maker see the best course of action when alternatives are available.

C is incorrect because an ethical decision making framework helps a decision-maker see a situation from multiple perspectives and pay attention to aspects of the situation that may be less evident if a short-term, not a long -term, self-focused perspective is applied.

3. Correct answer: A.

A is correct. Professional Conduct inquiries come from a number of sources including the monitoring of online and social media to detect disclosure of confidential exam information.

B is incorrect. Candidate conduct is monitored by exam proctors who complete reports on candidates suspected to have violated testing rules during the exam and at the exam center.

C is incorrect. Members and candidates must self-disclose on the annual Professional Conduct Statement all matters that question their professional conduct, such as involvement in civil litigation or a criminal investigation or being the subject of a written complaint. Disclosure of confidential exam information will not be found on the annual statement.

4. Correct answer: A.

A is correct. Standard V–Investment Analysis, Recommendations, and Actions includes the sub-section Communication with Clients and Prospective Clients. The other sub-sections within Standard V include Diligence and Reasonable Basis and Record Retention.

B is incorrect because Standard V–Investment Analysis, Recommendations, and Actions includes the sub-section Communication with Clients and Prospective Clients.

C is incorrect because Standard V–Investment Analysis, Recommendations, and Actions includes the sub-section Communication with Clients and Prospective Clients.

5. Correct answer: A.

A is correct because certain staff at Liu’s employer appear to be engaged in front-running, a violation of Standard VI(B)–Priority of Transactions, and market manipulation, a violation of Standard II(B)–Market Manipulation. If Liu observes these violations without taking steps to notify her employer, she will be in violation of Standard I(A)–Knowledge of the Law. Liu should know that the conduct observed is likely a violation of applicable laws, rules, and regulations and is a violation of the CFA Institute Code and Standards. Her first step, therefore, should be to attempt to stop the behavior by bringing it to the attention of the employer through a supervisor or the firm’s compliance department. Inaction may be construed as participation or assistance in the illegal or unethical conduct.

B is incorrect because the firm the member is employed by appears to be engaged in a classic pump and dump stock fraud and market manipulation scheme. Removing her name from the firm’s investment recommendation would not alleviate the member from her more immediate responsibilities under Standard I(A)–Knowledge of the Law because the firm and the member must not knowingly participate or assist in and must dissociate from any violations of such laws, rules, or regulations. Now that the member knows of the violations, she must dissociate from them. Inaction may be construed as participation or assistance in the illegal or unethical conduct.

C is incorrect because the firm the member is employed by appears to be engaged in a classic pump and dump stock fraud and market manipulation scheme and the member must not knowingly participate or assist in and must dissociate from any violations of such laws, rules, or

regulations as required by Standard I(A)–Knowledge of the Law. Inaction may be construed as participation or assistance in the illegal or unethical conduct.

6. Correct answer: B.

B is correct because Lin is placing himself in a situation where his objectivity or appearance of objectivity may be compromised, which is a violation of Standard I(B). It would have been more advisable for Lin to decline having Titan pay for this trip.

A is incorrect because Lin does disclose the activities to Dynasty’s compliance department. If Lin recommends the security, he may also want to disclose that he went on this company sponsored trip at that time.

C is incorrect because participating in this trip does not prevent Lin from performing the required analysis to make an informed investment decision.

7. Correct answer: C.

C is correct because Standard III(D)–Performance Presentation pertains to investment performance information, and there is no indication any violation has occurred.

A is incorrect because under Standard V(C)–Record Retention, Members and Candidates must develop and maintain appropriate records to support their investment analyses, recommendations, actions, and other investment-related communications with clients and prospective clients.

B is incorrect because Schlumberger has plagiarized the information he obtained from the websites of the World Bank and the various central banks by not quoting the sources within his research reports. This is a violation of Standard I(C)–Misrepresentation.

8. Correct answer: A.

A is correct because Standard I(D)–Misconduct states that members and candidates must not engage in any professional conduct involving dishonesty, fraud, or deceit or commit any act that reflects adversely on their professional reputation, integrity, or competence. By only reporting the gifts she received from clients but not the inexpensive gift from her CEO friend, she does not conform to her employer’s gift policy of reporting all gifts. Her non-compliance with employer policies reflects adversely on her professional reputation and honesty.

B is incorrect because the company policy is to report all gifts, not just those from clients.

C is incorrect because while she would likely maintain her appearance of being independent and objective by accepting an inexpensive gift from a CEO of a publicly listed company, she does not comply with her employer's policy of disclosing all gifts, regardless of value.

9. Correct answer: C.

C is correct because there is no indication the analyst had access to material nonpublic information and was in violation of Standard II(A)–Material Nonpublic Information. Specifically, Tucker did not have information concerning any decision by Bowron to acquire Hanchin stock since she is not a part of the decision-making team at Bowron, which determines the companies it plans to take over. The analyst had indicated numerous companies were viable options for takeover, and she did not single out any one company in particular.

A is incorrect because even though the company does not have a stock pre-clearance procedure, trading the stock of a company the analyst recommended as an acquisition candidate is an act which violates Standard IV(A)–Loyalty, as she did not give her employer the opportunity to take advantage of her skill/recommendation prior to buying the shares for her own portfolio.

B is incorrect because there has been a violation of Standard VI(B)–Priority of Transactions, which requires that investment transactions for clients and employers must have priority over investment transactions in which a Member or Candidate is the beneficial owner despite the fact that there are no stock pre-clearance procedures at Bowron.

10. Correct answer: B.

B is correct because Standard III(E)–Preservation of Confidentiality has not been violated. The analyst has a personal relationship with the officer of the auto company, and he is not a current, former, or prospective client, so there is no obligation for the analyst to maintain client confidentiality. However, the analyst did violate Standard I(C)–Misrepresentation when she represented another analyst's work as her own. In addition, the analyst also violated Standard II(A)–Material Nonpublic Information by including data that were material and nonpublic in her research report on sales figures.

A is incorrect because Standard I(C)–Misrepresentation was violated by the analyst when she

represented another analysts research report as her own.

C is incorrect because Standard II(A)–Material Nonpublic Information was violated when the analyst included data that were material and nonpublic in the research report on sales figures.

11. Correct answer: B.

B is correct because Standard III(A)–Loyalty, Prudence, and Care states that it is a member or candidate’s duty to vote proxies on behalf of clients in an informed and responsible manner. However, if a cost–benefit analysis shows voting all proxies may not benefit the client, voting all proxies may not be necessary. The member or candidate is responsible for informing all clients if this is the policy of the fund manager. The member or candidate must take steps to disclose this proxy voting policy to clients. Voting the Barnikoff proxy does not appear to offer a benefit because the issue is not of a critical nature, but voting the proxy for Matric involves a material issue and is a benefit that should be voted on.

A is incorrect because Standard III(A)–Loyalty, Prudence, and Care states that it is a member or candidate’s duty to vote proxies on behalf of clients in an informed and responsible manner. A manager must not blindly vote with management without first considering the impact of the issue at hand and its benefit to the client.

C is incorrect because while Standard III(A)–Loyalty, Prudence, and Care states that it is a member or candidate’s duty to vote proxies on behalf of clients in an informed and responsible manner, if a cost–benefit analysis shows voting all proxies may not benefit the client, voting all proxies may not be necessary.

12. Correct answer: B.

B is correct, as the manager gives instructions to sell his personal holdings after those of his clients so there is no indication that a violation of Standard VI(B)–Priority of Transactions occurred.

A is incorrect, as it is not clear selling a fixed percentage of all liquid stocks would be an investment action consistent with the stated objectives and constraints of each client’s portfolio.

C is incorrect as the decision by the manager to conduct an across the board sale of liquid stocks does not appear to have a reasonable and adequate basis nor to be supported by appropriate

research and investigation. This action appears to be motivated by the manager's interest in getting back to his golf game rather than any investment rationale.

13. Correct answer: C.

C is correct because Standard IV(C)–Responsibilities of Supervisors has not been violated as Seneca is not responsible for the supervision of any employees when he makes sales demonstrations to clients because he prepared the material himself. Seneca violated Standard IV(A)–Loyalty by misleading potential investors on the performance they might achieve with the index funds, thereby causing reputational risk to his employer. Seneca has also violated Standard III(D)–Performance Presentation because the sales demonstrations he conducts do not provide a fair and accurate representation of performance clients are likely to experience.

A is incorrect because Seneca understates risks and only includes positive assumptions in his sales presentations in order to achieve higher simulated performance. This is a violation of Standard IV(A)–Loyalty because he is causing reputational risk to his employer by misleading potential investors on the performance they might achieve with the index funds. Standard IV(A) requires members and candidates to protect the interests of their firm by refraining from any conduct that would injure the firm.

B is incorrect because Seneca has violated Standard III(D)–Performance Presentation because the sales demonstrations he conducts do not provide a fair and accurate representation of performance clients are likely to experience.

14. Correct answer: C.

C is correct. In order to avoid violating Standard III(E) Staal should determine if applicable securities regulations require disclosing the records before she provides the confidential information concerning her client's investments.

A is incorrect as providing the requested information would violate the confidentiality of the client's records.

B is incorrect as providing the requested information would violate the confidentiality of the client's records.

15. Correct answer: A.

A is correct because Singh does not violate any Standard relating to Duties to Employers. She conducts unrelated non-competitive services to clients outside of business hours and thus does not deprive her employer of the advantage of her skills and abilities, nor is there any indication that she divulges confidential information or otherwise causes harm to her employer. She also does not need to divulge information relating to her additional compensation or to seek permission, as her management consulting services do not create a conflict of interest with her employer's interest.

B is incorrect because Singh conducts unrelated non-competitive services to clients outside of business hours and thus does not deprive her employer of the advantage of her skills and abilities, nor is there any indication that she divulges confidential information or otherwise causes harm to her employer.

C is incorrect because she does not need to divulge information relating to her additional compensation or to seek permission, as her management consulting services do not create a conflict of interest with her employer's interest.

16. Correct answer: C.

C is correct because the requirement under Standard IV(C)–Responsibilities of Supervisors does not include any reference to industry standards. Standard IV(C) requires supervisors to instruct those subordinate to whom supervision is delegated about detection methods to prevent violations of laws, rules, regulations, firm policies, and the CFA Institute Code and Standards.

A is incorrect because the requirement under Standard IV(C)–Responsibilities of Supervisors includes detection of any violation of firm policies.

B is incorrect because a supervisor's responsibilities under Standard IV(C)–Responsibilities of Supervisors include instructing those subordinates to whom supervision is delegated about methods to prevent and detect violations of laws, rules, regulations, firm policies, and the Code and Standards. Laws would also include legal restrictions.

17. Correct answer: A.

A is correct as the boss' insistence that the credit rating be given an investment grade rating irrespective of the analysis undertaken indicates a systemic disregard for due diligence, reasonable

basis, and true representation. This shows a total disregard for the Standards, in particular Standard V(A)–Diligence and Reasonable Basis. Bradovic’s best course of action consequently is to resign as the company’s current practice of giving false credit ratings is likely to continue.

B is incorrect because by upgrading the credit report he would be participating in a misrepresentation, even with a note of objection. This would violate the Code and Standards

C is incorrect because by disassociating with this particular credit report, bond issue, and client he can remove himself from a situation that would likely cause a misrepresentation to the true creditworthiness of the bond issue. However, due to the systemic nature of the violations as his boss always insists on an investment grade rating, it is evident that the company does not intend to act in an ethical manner. As the practice of giving false credit ratings is likely to continue, the analyst should quit the company.

18. Correct answer: C.

C is correct because if recommendations are contained in capsule form (such as a recommended stock list), members and candidates should notify clients that additional information and analysis are available from the producer of the report as required by Standard V(B)–Communication with Clients and Prospective Clients. In this case, a clear statement on the website that more information is available upon request would be required.

A is incorrect because Moab’s plans for the social media recommendations do not violate Standard V(B)–Communication with Clients and Prospective Clients, so it does not need to describe the investment system in detail. The recommendation outlines the basic process and logic of Red’s investment approach and is sufficient enough for clients to understand its limitations or inherent risks.

B is incorrect because according to Standard V(B)–Communication with Clients and Prospective Clients, the member or candidate must keep clients and other interested parties informed on an ongoing basis about changes to the investment process, and an annual update may not be sufficient.

19. Correct answer: C.

C is correct because even though Pavlov had his former employer’s permission to take his

performance record and supporting research reports with him, he does not have the underlying performance data to support those historical recommendations and is therefore most likely in violation of Standard V(C)–Record Retention. Pavlov had the permission of his employer to take his historical performance record and research reports with him when he left the firm so he is not in violation of Standard IV(A)–Loyalty.

A is incorrect because even though Pavlov had his former employer’s permission to take his performance record and research reports with him, he does not have the underlying performance data to support those historical return calculations and therefore is most likely in violation of Standard V(C)–Record Retention.

B is incorrect because Pavlov had the permission of his employer to take his historical performance record and research reports with him when he left the firm so he is not in violation of Standard IV(A)–Loyalty.

20. Correct answer: B.

B is correct because according to Standard VI(A)–Disclosure of Conflicts, members and candidates must make full and fair disclosure of all matters that could reasonably be expected to impair their independence and objectivity or interfere with respective duties to clients.

A is incorrect because there is no requirement that these businesses be separated, only that full and fair disclosure be made of all matters that could reasonably be expected to impair their independence and objectivity or interfere with respective duties to clients.

C is incorrect because there is no requirement that profits earned be returned to the limited partners, only that full and fair disclosure be made of all matters that could reasonably be expected to impair their independence and objectivity or interfere with respective duties to clients.

21. Correct answer: B.

B is correct because Standard VI(B)–Priority of Transactions dictates that members and candidates give their clients and employer priority when making personal investment transactions. Even when clients allow or insist the manager invest alongside them, the manager’s transactions must never adversely affect the interests of the clients. A popular or “hot” IPO in a frontier market is likely to be oversubscribed. In such cases, Standard VI(B) dictates that the manager should not

participate in this event to better ensure that clients would have a higher probability of getting their full subscription allotment, even though clients have allowed or dictated she do so.

A is incorrect because the clients are unlikely be harmed by the manager also selling a US blue chip value stock in a stable market as the liquidity of the stock is likely to be large enough that a simultaneous sale would not negatively impact on the price of the share.

C is incorrect because the volume of UK government bonds offered through a primary market is likely to be large and at a fixed price based on the auction outcome. O'Neil's bid would, however, need to be the same as her clients' bids.

22. Correct answer: B.

B is correct because the Standards do not prevent a person from claiming to be an expert in their area of specialty as long it is not a misrepresentation and/or an exaggeration of their skill and expertise.

A is incorrect because according to Standard VII, CFA Institute trademarks are not allowed to be abbreviated.

C is incorrect because Standard VII—Responsibilities as a CFA Institute Member or CFA Candidate restricts the disclosing of all aspects of the CFA exam, including broad topical areas. These are considered confidential and thus should not be discussed over the Internet.

23. Correct answer: A.

A is correct. Firms claiming compliance with the GIPS standards are responsible for their claim of compliance and for maintaining that compliance — that is, firms self-regulate their claim of compliance.

B is incorrect. Verification is recommended, not required, and is performed to test the process with respect to an entire firm, not on specific composites or a sample of composites.

C is incorrect. Verification, not the firm, provides the assurance as to whether the firm's policies and procedures related to composite and pooled fund maintenance, as well as the calculation, presentation, and distribution of performance, have been designed in compliance with the GIPS standards and have been implemented on a firm-wide basis.

24. Correct answer: B.

B is correct. Standard 3.A.4 states that non-fee-paying, discretionary portfolios may be included in a composite.

A is incorrect. Standard 3.A.2 prohibits firms from including nondiscretionary portfolios in a composite.

C is incorrect. Standard 3.A.5 prohibits firms from excluding portfolios from composites based solely on legal structure differences

25. Correct answer: A.

A is correct because neither Paralova or Klemmer violated CFA Standards through their statements. Paralova did not violate Standard VII(B) Reference to CFA Institute, the CFA Designation, and the CFA Program when she made her comments about what getting the Charter will reflect and the hope for a pay raise. The Standard states, "When referring to CFA Institute, CFA Institute membership, the CFA designation, or candidacy in the CFA Program, Members and Candidates must not misrepresent or exaggerate the meaning or implications of membership in CFA Institute, holding the CFA designation, or candidacy in the CFA program." Klemmer did not violate Standard VII (B) Reference to CFA Institute, the CFA Designation, and the CFA Program when he expressed his opinion that Paralova's potential pay raise will reflect her enhanced skills. Klemmer also complied with Standard VII(A) Responsibilities as a CFA Institute Member or CFA Candidate, Conduct as Participants in CFA Institute Programs when stating an opinion about the difficulty of the exam without revealing any specific details or the need to study all subjects. The Standard states that candidates "must not engage in any conduct that compromises . . . the integrity, validity, or security of CFA Institute programs."

B is incorrect as Paralova did not violate Standard VII (B) Reference to CFA Institute, the CFA Designation, and the CFA Program when she made her comments about what getting the Charter will reflect and the hope for a pay raise. The Standard states, "When referring to CFA Institute, CFA Institute membership, the CFA designation, or candidacy in the CFA Program, Members and Candidates must not misrepresent or exaggerate the meaning or implications of membership in CFA Institute, holding the CFA designation, or candidacy in the CFA program."

C is incorrect as Klemmer did not violate Standard VII (B) Reference to CFA Institute, the CFA

Designation, and the CFA Program when he expressed his opinion that Paralova's potential pay raise will reflect her enhanced skills. Klemmer also complied with Standard VII(A): Responsibilities as a CFA Institute Member or CFA Candidate, Conduct as Participants in CFA Institute Programs when stating an opinion about the difficulty of the exam without revealing any specific details or the need to study all subjects. The Standard states that candidates "must not engage in any conduct that compromises . . . the integrity, validity, or security of CFA Institute programs."

26. Correct answer: C.

C is correct because according to the recommended procedures for compliance with Standard III (B), Fair Dealing, "A common practice to assure fair dealing is to communicate recommendations simultaneously within the firm and to customers. Members and candidates should encourage firms to develop guidelines that prohibit personnel who have prior knowledge of an investment recommendation from discussing or taking any action on the pending recommendation." Members and candidates should encourage firms to develop guidelines that prohibit personnel who have prior knowledge of an investment recommendation from discussing or taking any action on the pending recommendation."

A is incorrect because according to the recommended procedures for compliance with Standard III (B), Fair Dealing, "A common practice to assure fair dealing is to communicate recommendations simultaneously within the firm and to customers."

B is incorrect because according to the recommended procedures for compliance with Standard III (B), Fair Dealing, "A common practice to assure fair dealing is to communicate recommendations simultaneously within the firm and to customers."

27. Correct answer: C.

C is correct because Standard I(C), Misrepresentation, ".. prohibits members and candidates from making any statements that promise or guarantee a specific rate of return on volatile investments. Because the equity-based investment is inherently volatile, and the future return is unpredictable, [Prakash's] promises about future returns making up for the penalty of withdrawing the funds violates Standard I(C). Trust is the foundation of the investment profession. Investment

professionals who make false or misleading statements not only harm investors but also reduce the level of investor confidence in the investment profession and threaten the integrity of the capital markets." Therefore, Prakash has violated Standard I(C).

Further, according to Standard III(A), Loyalty, Prudence, and Care "[p]rudence requires caution and discretion. The exercise of prudence by investment professionals requires that they act with the care, skill, and diligence that a reasonable person acting in a like capacity and familiar with such matters would use. ... Acting with care requires members and candidates to act in a prudent and judicious manner in avoiding harm to clients." Prakash causes harm to her client by recommending that the client transfer money from a tax-deferred account to TXM's large-cap fund, a process that will cost the client \$15,000 in penalties. Therefore, Prakash also violated Standard III(C).

A is incorrect because Standard I(C), Misrepresentation, "... prohibits members and candidates from making any statements that promise or guarantee a specific rate of return on volatile investments. Because the equity-based investment is inherently volatile, and the future return is unpredictable, [Prakash's] promises about future returns making up for the penalty of withdrawing the funds violates Standard I(C). Trust is the foundation of the investment profession. Investment professionals who make false or misleading statements not only harm investors but also reduce the level of investor confidence in the investment profession and threaten the integrity of the capital markets." Therefore, Prakash has violated Standard I(C).

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B is incorrect because Standard III(A), Loyalty, Prudence, and Care "[p]rudence requires caution and discretion. The exercise of prudence by investment professionals requires that they act with the care, skill, and diligence that a reasonable person acting in a like capacity and familiar with

such matters would use. ...Acting with care requires members and candidates to act in a prudent and judicious manner in avoiding harm to clients." Prakash causes harm to her client by recommending that the client transfer money from a tax-deferred account to TXM's large-cap fund, a process that will cost the client \$15,000 in penalties. Therefore, Prakash also violated Standard III(C).

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Questions 28~45 Relate to Quantitative Methods**28. Correct answer: C.**

C is correct. An opportunity cost is the value that investors forgo by choosing a particular course of action.

A is incorrect. A sunk cost is one that has already been incurred and therefore cannot be changed

B is incorrect. The required return is the minimum rate of return an investor must receive in order to accept the investment.

29. Correct answer: C.

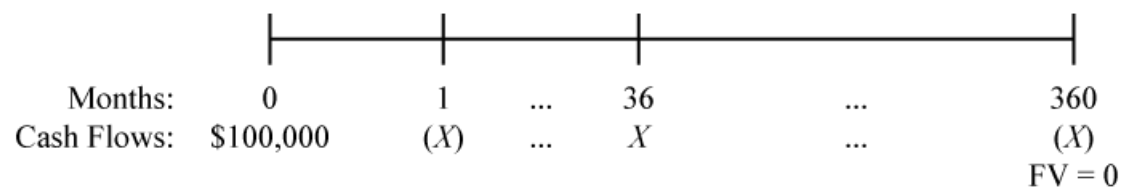
C is correct. $EAR = (1 + \text{periodic interest rate})^m - 1 = [1 + (0.09/365)]^{365} - 1 = 0.094162$, rounded to 9.42%.

A is incorrect because it treats the stated rate and the EAR as equivalents.

B is incorrect; it is calculated using $(9/365) \times 4 = 0.09863$.

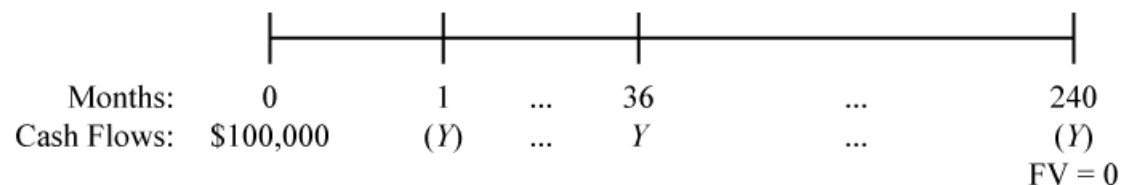
30. Correct answer: A.

A is correct. The timeline for the 30-year fixed rate is as follows:



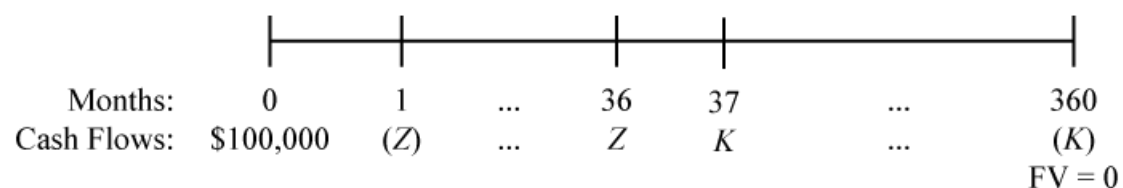
where X is the monthly payment for all 360 months.

The timeline for the 20-year fixed rate is as follows:



where Y is the monthly payment for all 240 months.

The timeline for the 30-year ARM is as follows:



where Z is the monthly payment for the first 36 months (three years) and K is the monthly payment for months 37 to 360 (payment after Year 3).

The loan payments are calculated using a financial calculator.

Loan	Calculation of Monthly Payments	Initial Payment (\$)	Loan Payment after Three Years (\$)
30-year fixed	X is found as follows: $N = 12 \times 30 = 360$, $I/Y = (5/12) = 0.41667$, $PV = 100,000$, $FV = 0$, calculate $PMT = 536.82$.	536.82	536.82
20-year fixed	Y is found as follows: $N = 12 \times 20 = 240$, $I/Y = (4.385/12) = 0.36542$, $PV = 100,000$, $FV = 0$, calculate $PMT = 626.46$.	626.46	626.46
30-year ARM	Z is found as follows: $N = 12 \times 30 = 360$, $I/Y = (3.75/12) = 0.31250$, $PV = 100,000$, $FV = 0$, calculate $PMT = 463.12$. K is found in two steps: First, the balance at end of Year 3 is found: $N = 12 \times 27 = 324$, $I/Y = (3.75/12) = 0.31250$, $FV = 0$, $PMT = 463.12$, calculate $PV = 94,271.43$. Then, K is calculated as follows: $N = 324$, $I/Y = (5.5/12) = 0.45833$, $PV = 94,271.43$, $FV = 0$, calculate $PMT = 559.16$.	463.12 (this corresponds to Z)	559.16 (this corresponds to K)

After Year 3, the 30-year fixed-rate loan has the lowest payment: $536.82 < 559.16 < 626.46$.

Note: Numbers may differ slightly from those given above because of rounding.

B is incorrect; $536.82 < 559.16 < 626.46$.

C is incorrect; $536.82 < 559.16 < 626.46$.

31. Correct answer: B.

B is correct. The sum of the 10 numbers is 140. Dividing by 10 gives the mean of 14.

A is incorrect and is calculated by adding the absolute values of the ten numbers (i.e., -11 is valued as 11 and -5 is valued as 5).

C is incorrect and is calculated by dividing 140 by 9 (i.e., by $n - 1$ rather than n).

32. Correct answer: A.

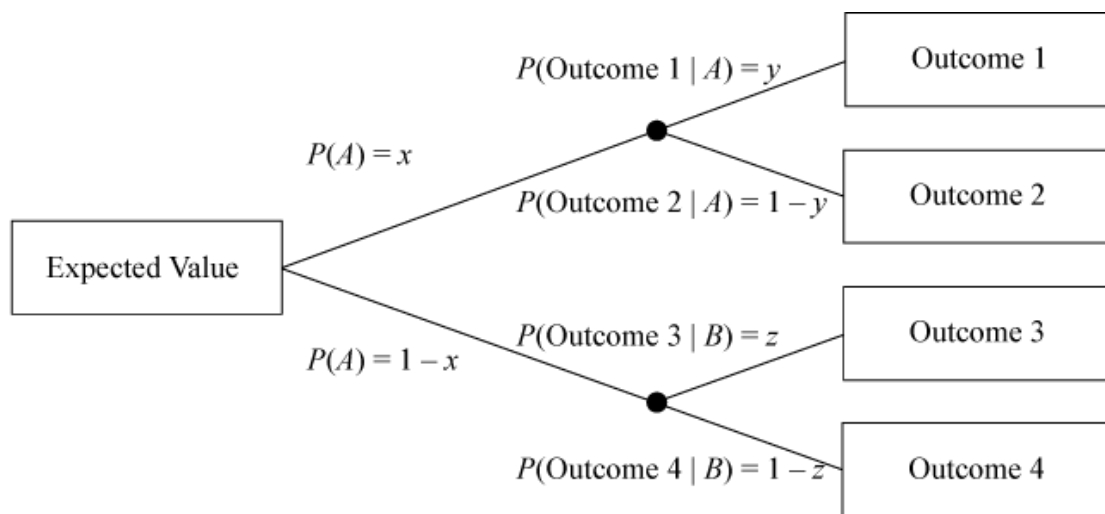
A is correct. A distribution that is more peaked than normal is called leptokurtic.

B is incorrect. A distribution that is neither more peaked nor less peaked than normal is called mesokurtic.

C is incorrect. A distribution that is less peaked than normal is called platykurtic.

33. Correct answer: B.

B is correct. The following figure depicts an example of a tree diagram:



A tree diagram is a diagram with branches emanating from nodes representing either mutually exclusive outcomes or mutually exclusive decisions. Mutually exclusive outcomes are dependent (the occurrence of one outcome does affect the probability of occurrence of the other outcome). In addition, outcomes at each node are conditional (the probability of an outcome is conditioned on another outcome).

A is incorrect. Two outcomes are independent if the occurrence of one outcome does not affect the probability of occurrence of the other outcome. At each node of a tree diagram, the two outcomes that follow are dependent because the probability on the outcome on one branch is related to the probability of the outcome on the other branch.

C is incorrect. Outcomes are unconditional when the probability of an outcome is not conditioned on another outcome. In a tree diagram, outcomes at each node are conditional (the probability of an outcome is conditioned on another outcome).

34. Correct answer: C.

C is correct. The total probability rule explains the unconditional probability of an event in terms of probabilities conditional on mutually exclusive and exhaustive scenarios, where: $P(A) = P(A | S)P(S) + P(A | S^C)P(S^C)$.

Given that $P(\text{non-survivor}) = 0.40$, then $P(\text{survivor}) = 1 - P(\text{non-survivor}) = 1 - 0.40 = 0.60$.

Accordingly,

$$P(\text{pass test}) = P(\text{pass test} | \text{survivor})P(\text{survivor}) + P(\text{pass test} | \text{non-survivor})P(\text{non-survivor})$$

$$0.55 = 0.85(0.60) + P(\text{pass test} | \text{non-survivor})(0.40)$$

Thus, $P(\text{pass test} | \text{non-survivor}) = [0.55 - 0.85(0.60)]/0.40 = 0.10$.

A is incorrect because the total probability rule is a weighted average probability of all possible scenarios. This answer incorrectly applies the multiplication rule, which holds that the joint probability of two independent (not conditional) events equals the product of the two individual probabilities for non-survivors and passing the test: $(0.40)(0.55) = 0.22$, which does not account for all mutually exclusive and exhaustive scenarios as required by the total probability rule.

B is incorrect because 0.35 is the result if the probability of $P(\text{non-survivor}) = 0.60$. The question states that the probability of $P(\text{non-survivor})$ is 0.40, not 0.60. It is calculated as $[0.55 - 0.85(0.40)]/0.60 = 0.35$.

35. Correct answer: C.

C is correct. As long as security returns are not perfectly positively correlated, diversification benefits are possible.

A is incorrect; correlation cannot be greater than positive one.

B is incorrect; if correlations equal 1, no diversification benefit occurs.

36. Correct answer: C.

C is correct. The EBIT-to-interest ratio is equal to 2.0 when the EBIT is \$40 million. Given that the values between \$36 million and \$48 million are equally likely, the probability of the ratio being equal to or less than 2.0 is 33.3% ($= [\$40 \text{ million} - \$36 \text{ million}] / [\$48 \text{ million} - \$36 \text{ million}]$). Consequently, the probability of the ratio being greater than 2.0 is 66.7% (i.e., $1 - \text{Probability of the ratio being equal to or less than 2.0}$).

A is incorrect. This treats the distribution as discrete with increments in \$1M.

	EBIT	Int	EBIT/INT		
	36	20	1.8		
	37	20	1.85		
	38	20	1.9		
	39	20	1.95		
	40	20	2		
	41	20	2.05		
	42	20	2.1		
	43	20	2.15		
	44	20	2.2		
	45	20	2.25		
	46	20	2.3		
	47	20	2.35		
	48	20	2.4		
Cell Count	13		8	0.615	Prob >2.0

B is incorrect. This is the probability of the ratio being equal to or less than 2.0.

37. Correct answer: B.

B is correct. A negative return is any return that is less than zero. The chance of a negative return falls in the area to the left of 0% under a standard normal curve. By standardizing the returns and standard deviations of the two assets, the likelihood of either asset experiencing a negative return may be determined: Z-score (standardized value) = $(X - \mu)/\sigma$

$$\text{Z-score for a bond return of 0\%} = (0 - 2)/5 = -0.40.$$

$$\text{Z-score for a stock return of 0\%} = (0 - 10)/15 = -0.67.$$

For bonds, a 0% return falls 0.40 standard deviations below the mean return of 2%. In contrast, for stocks, a 0% return falls 0.67 standard deviations below the mean return of 10%. 0.40 of a standard deviation is less than 0.67 of a standard deviation. Negative returns therefore occupy more of the left tail of the bond distribution than the stock distribution. Thus, bonds are more likely than stocks to experience a negative return.

A is incorrect because on average 95% of returns will fall in the interval $\mu \pm 2\sigma$ (which is 30%).

C is incorrect because the Z-score for a 3% bond return is calculated as $Z = (X - \mu)/\sigma = (3 - 2)/5 = 0.20$.

38. Correct answer: C.

C is correct because "[I]n this method [convenience sampling], an element is selected from the population based on whether or not it is accessible to a researcher or on how easy it is for a researcher to access the element. Because the samples are selected conveniently, they are not necessarily representative of the entire population, and hence the level of the sampling accuracy could be limited." By choosing to use all the data from an internal database, the analyst is using convenience sampling.

A is incorrect because cluster sampling "requires the division or classification of the population into subpopulation groups, called clusters. In this method, the population is divided into clusters, each of which is essentially a mini-representation of the entire populations. Then certain clusters are chosen as a whole using simple random sampling." However, in this situation, the analyst uses all the data from the database, without dividing them into clusters, which best describes convenience sampling, not cluster sampling.

B is incorrect because "[t]his sampling process [judgmental sampling] involves selectively handpicking elements from the population based on a researcher's knowledge and professional judgment. ... In circumstances where there is a time constraint, however, or when the specialty of researchers is critical to select a more representative sample than by using other probability or non-probability sampling methods, judgmental sampling allows researchers to go directly to the target population of interest." However, in this situation, the analyst uses all the data from the database, without selecting elements based on her knowledge, which best describes convenience sampling, not judgmental sampling.

39. Correct answer: A.

A is correct. As the degree of confidence is increased, the confidence interval becomes wider. A larger sample size decreases the width of a confidence interval.

B is incorrect. As the degree of confidence is increased, the confidence interval becomes wider. A larger sample size decreases the width of a confidence interval.

C is incorrect. As the degree of confidence is increased, the confidence interval becomes wider. A larger sample size decreases the width of a confidence interval.

40. Correct answer: A.

A is correct because "[i]n bootstrap, we repeatedly draw samples from the original sample, and each resample is of the same size as the original sample. Note that each item drawn is replaced for the next draw (i.e., the identical element is put back into the group so that it can be drawn more than once)." "Unlike bootstrap, which repeatedly draws samples with replacement, jackknife samples are selected by taking the original observed data sample and leaving out one observation at a time from the set (and not replacing it)."

B is incorrect because "[b]ootstrap, one of the most popular resampling methods, uses computer simulation for statistical inference without using an analytical formula such as a z -statistic or t -statistic." Moreover, "[c]ompared with conventional statistical methods, bootstrap does not rely on an analytical formula to estimate the distribution of the estimators. It is a simple but powerful method for any complicated estimators and particularly useful when no analytical formula is available."

C is incorrect because this is a property of jackknife resampling technique, not bootstrap. "For a sample of size n , jackknife usually requires n repetitions, whereas with bootstrap, we are left to determine how many repetitions are appropriate."

41. Correct answer: C.

C is correct. The power of a test is the probability of correctly rejecting the null hypothesis—that is, the probability of rejecting the null when it is false.

A is incorrect because this is the definition of Type I error.

B is incorrect because this is in fact a Type I error.

42. Correct answer: B.

B is correct. A parametric test is more appropriate than a non-parametric one when an analyst is concerned with parameters whose validity depends on a definite set of assumptions—for example, assumptions about the distribution of the population producing the sample.

A is incorrect. A nonparametric test is suitable for this case.

C is incorrect. A nonparametric test is also suitable for this.

43. Correct answer: C.

C is correct because the variation in the demand for corn is being used to explain the variation in the supply of wheat. "We refer to the variable whose variation is being used to explain the variation of the dependent variable as the **independent variable**, or the explanatory variable; it is typically denoted by X ."

A is incorrect because demand for corn is not limited to values of 0 or 1. "Suppose we want to examine whether a company's quarterly earnings announcements influence its monthly stock returns. In this case, we could use an **indicator variable**, or dummy variable, that takes on only the values 0 or 1 as the independent variable."

B is incorrect because variation in the demand for corn is being used to explain the variation in the supply of wheat. Therefore the variation in the supply of wheat is the dependent variable, or explained variable. "We refer to the variable whose variation is being explained as the **dependent variable**, or the explained variable; it is typically denoted by Y ."

44. Correct answer: C.

C is correct because "[i]n regression analysis, we can use an F -distributed test statistic to test whether the slopes in a regression are equal to zero, with the slopes designated as b_i , against the alternative hypothesis that at least one slope is not equal to zero:

$$H_0: b_1 = b_2 = b_3 = \dots = b_k = 0.$$

H_a : At least one b_k is not equal to zero.

For simple linear regression, these hypotheses simplify to $H_0: b_1 = 0$. $H_a: b_1 \neq 0$." If we fail to reject the null hypothesis that the slope is 0, it implies that there is a linear relationship between the dependent and independent variables.

A is incorrect because a t -statistic tests if the intercept is statistically different from zero. "We can test whether the intercept is different from the hypothesized value, B_0 , by comparing the estimated intercept (\hat{b}_0) with the hypothesized intercept and then dividing the difference by the standard error of the intercept..."

B is incorrect because a t -statistic tests if there is a positive correlation between the dependent and independent variables, that is, whether the slope coefficient of the linear regression is greater than zero. "We can use the F -statistic to test for the significance of the slope coefficient (that is,

whether it is significantly different from zero), but we also may want to perform other hypothesis tests for the slope coefficient—for example, testing whether the population slope is different from a specific value or whether the slope is positive. We can use a t -distributed test statistic to test such hypotheses about a regression coefficient."

45. Correct answer: A.

A is correct because for some regression analyses, "we could use an indicator variable, or dummy variable, that takes on only the values 0 or 1 as the independent variable."

B is incorrect because it describes the range of a coefficient of determination, not an indicator variable. "[A]n **indicator variable**, or dummy variable ... takes on only the values 0 or 1 as the independent variable."

C is incorrect because it is the range of a correlation coefficient, not an indicator variable. "[A]n **indicator variable**, or dummy variable ... takes on only the values 0 or 1 as the independent variable."

Questions 46~63 Relate to Economics**46. Correct answer: B.**

B is correct. The own-price elasticity of demand ($E_{p_x}^d$) is calculated as:

$$E_{p_x}^d = \frac{\% \Delta Q_x^d}{\% \Delta P_x} = \frac{\frac{120 - 100}{100}}{\frac{13 - 15}{15}} = -1.50$$

where

$\% \Delta Q_x^d$ = the change in quantity (in %)

$\% \Delta P_x$ = the change in price (in %)

A is incorrect. It uses $\% \Delta P / \% \Delta Q$, calculated as $[(13 - 15)/15] / [(120 - 100)/100] = -0.67$.

C is incorrect. It uses correct formula, but bases $\% \Delta Q$ on new level of demand, calculated as $[(120 - 100)/120] / [(13 - 15)/15] = -1.25$.

47. Correct answer: C.

C is correct. A Giffen good is an inferior good. All inferior goods have a negative income effect (less is purchased as income rises). While the substitution effect is always positive for all goods, for a Giffen good the income effect is so strong and so negative that it overpowers the substitution effect; the result is that as its price declines, less of it is purchased. This results in a positively sloped individual demand curve.

A is incorrect. A substitution effect is always positive for all goods.

B is incorrect. For a Giffen good, the consumer actually buys less of the good when its price falls, resulting in a positively sloped demand curve (upward sloping).

48. Correct answer: C.

C is correct. Specialization by workers can increase their proficiency, leading to lower average costs when the firm is large enough to allow specialization.

A is incorrect. Supply constraints lead to higher resource prices, creating diseconomies.

B is incorrect. Duplication of product lines is a diseconomy.

49. Correct answer: B.

B is correct because "the demand curve that each perfectly competitive firm faces is a horizontal

line at the equilibrium price, even though the demand curve for the whole market is downward sloping."

A is incorrect because "the demand curve that each perfectly competitive firm faces is a horizontal line at the equilibrium price, even though the demand curve for the whole market is downward sloping."

C is incorrect because "the demand curve that each perfectly competitive firm faces is a horizontal line at the equilibrium price, even though the demand curve for the whole market is downward sloping."

50. Correct answer: B.

B is correct. Solve for P from the quantity demanded:

$$Q = 800 - 0.25P$$

$$P = 3,200 - 4Q$$

$$TR = P \times Q = 3,200Q - 4Q^2$$

$$MR = \Delta TR / \Delta Q = 3,200 - 8Q$$

Therefore, the slope of the curve is -8 .

A is incorrect because it is the slope of the quantity demanded.

C is incorrect because it is the slope of the demand curve ($-1/0.25$) when P is a function of Q .

51. Correct answer: A.

A is correct. Gross domestic product (GDP) can be defined in terms of either output or income:

- it is the market value of all final goods and services produced within the economy in a given period of time (output definition) or, equivalently,
- it is the aggregate income earned by all households, all companies, and the government within the economy in a given period of time (income definition).

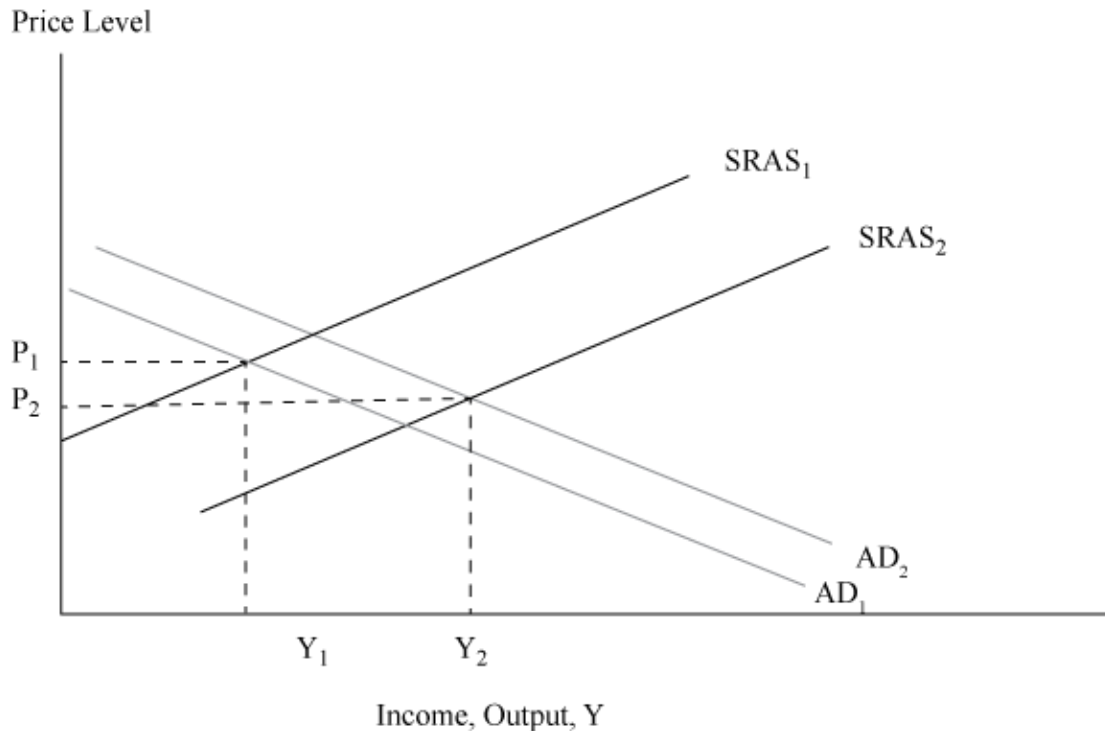
B is incorrect. GDP is the total income earned by all households and not country citizens.

C is incorrect. GDP includes the final goods and not the resalable (intermediate) goods.

52. Correct answer: C.

C is correct. If both aggregate demand (AD) and aggregate supply (AS) increase, real GDP will

increase, but the impact on inflation is not clear unless we know the magnitude of the changes because an increase in AD will increase the price level, but an increase in AS will decrease the price level. If AD increases more than AS, the price level will increase. If AS increases more than AD, as depicted in the graph, the price level will decline.



B is incorrect. An increase in both aggregate demand (AD) and aggregate supply (AS) will increase the participation rate as discouraged workers reenter the labor force.

A is incorrect. An increase in both aggregate demand and supply raises real GDP.

53. Correct answer: A.

A is correct because "[i]t is recognized that in a world with financial frictions, business cycles can be amplified, with deeper recessions and more extensive expansions because of changes in access to external financing. In line with this, it is found that the duration and magnitude of recessions and recoveries are often shaped by linkages between business and credit cycles."

B is incorrect because "[c]redit cycles describe the changing availability—and pricing—of credit. They describe growth in private sector credit (availability and usage of loans), which is essential for business investments and household purchases of real estate. They are therefore connected to real economic activity captured by business cycles that describe fluctuations in real GDP."

C is incorrect because although "financial variables tend to co-vary closely with each other and

can often help explain the size of an economic expansion or contraction, [but] they are not always synchronized with the traditional business cycle. Credit cycles tend to be longer, deeper, and sharper than business cycles."

54. Correct answer: C.

C is correct because "Austrian economists argue that low interest rates and excessive credit growth during boom times result in over-investment in projects with low returns, causing failure and a move into recession."

A is incorrect because "the Austrian school sees business cycles arising from government (and central bank) policies as the cause of overinvestment and subsequent failure."

B is incorrect because as "the Austrian school sees business cycles arising from government (and central bank) policies as the cause of overinvestment and subsequent failure, they suggest that policy makers should rarely intervene in the economy."

55. Correct answer: C.

C is correct because "[a]ccording to the monetarist school, business cycles may occur both because of exogenous shocks and because of government intervention."

A is incorrect because "[a]ccording to the monetarist school, business cycles may occur both because of exogenous shocks and because of government intervention."

B is incorrect because "[a]ccording to the monetarist school, business cycles may occur both because of exogenous shocks and because of government intervention."

56. Correct answer: C.

C is correct because "[t]he process of money creation...depends on the amount of money that banks keep in reserve to meet the withdrawals of its customers. This practice of lending customers' money to others on the assumption that not all customers will want all of their money back at any one time is known as fractional reserve banking." "[B]ankers in an economy come to the view that they need to retain [hold in cash] only 10 percent of any money deposited with them. This is known as the **reserve requirement**."

A is incorrect because "[t]he amount of money that the banking system creates through the

practice of fractional reserve banking is a function of 1 divided by the reserve requirement, a quantity known as the **money multiplier**."

B is incorrect because an increase in the reserve requirement will reduce the money multiplier, and therefore reduce potential money creation.

"The total amount of money 'created' from this one deposit of €100 can be calculated as: New deposit/Reserve requirement = $€100/0.10 = €1,000$." This formula shows that if the reserve requirement is increased, money creation will decrease.

57. Correct answer: A.

A is correct because the central bank acts "as a lender of last resort to banks. Because the central bank effectively has the capacity to print money, it is in the position to be able to supply the funds to banks that are facing a damaging shortage."

B is incorrect because "[g]enerally, a central bank is the monopoly supplier of the currency."

C is incorrect because "[m]ost central banks will ... be responsible for managing their country's foreign currency reserves."

58. Correct answer: B.

B is correct because "the neutral policy rate for any economy comprises two components: Real trend rate of growth of the underlying economy, and... [t]he real trend rate of growth of an economy ... that is achievable in the long run that gives rise to stable inflation." The formula is "Neutral rate = Trend growth + Inflation target."

A is incorrect because it is the long-term growth rate that gives rise to stable inflation. No inflation is in fact stable inflation (zero), but this does not best describe the equation. The formula is "Neutral rate = Trend growth + Inflation target."

C is incorrect because it is the long-term growth rate, not short-term, that gives rise to stable inflation. The formula is "Neutral rate = Trend growth + Inflation target."

59. Correct answer: C.

C is correct. A comparative advantage arises if one entity can produce an item at a lower opportunity cost than another. An absolute advantage in producing a good (or service) arises if one

entity can produce that good at a lower cost or use fewer resources in its production than its trading partner. Even if a country does not have an absolute advantage in producing any of its goods, it can still gain from trade by exporting the goods in which it has a comparative advantage. The country with the lower opportunity cost (with the comparative advantage) should specialize and produce its low opportunity cost item, and the other country should produce the high opportunity cost item, trading the goods between each other to make both better off.

A is incorrect. Economies of scale or lower labor costs will likely result in a lower cost of production, but only a comparative advantage is necessary to benefit from trade.

B is incorrect. An absolute advantage in producing a good (or service) arises if one country is able to produce that good at a lower cost or use fewer resources in its production than its trading partner. It is the lower opportunity cost that one country has that is the reason that one country should specialize in order to gain from trade.

60. Correct answer: A.

A is correct. Note that the borrowing from a bank in Singapore is not a current account transaction.

Transaction	Current Account (US\$ millions)
Bought raw material from Indonesia	-50.0
Sold food products to France	65
Received royalty fees from its branch in the United Kingdom	0.5
Donated to charitable institution in Africa	-0.1
Borrowed from a bank in Singapore	Omit
Paid legal fees to its German legal consultant company	-1.2
Received interest coupon from its investment in Eurobonds issued in Luxembourg	0.8
Total	15

B is incorrect because the royalty fee is not included.

C is incorrect because the bank loan is included.

61. Correct answer: A.

A is correct. The NZD/SGD cross-rate is $\text{NZD/USD} \times \text{USD/SGD} = 0.7670 \times 1.2600 = 0.9664$.

The traveler will receive: $\text{NZD}0.9664 \text{ per SGD}$; $\text{NZD}0.9664 \times \text{SGD}7,500 = \text{NZD}7,248$.

B is incorrect. It calculates NZD/SGD incorrectly by inverting USD/SGD ($0.7670 \times 1/1.26 = 0.6087$) and multiplying by 7,500 = 4,565 NZD.

This is equivalent to incorrectly first converting to USD ($1/1.26 \times 7,500$ SGD) to give 5,952 USD and then converting to NZD ($\$5,952 \times 0.7670$ NZD/\$ = 4,565 NZD).

C is incorrect. It calculates the cross rate correctly, but divides it into 7,500: $7,500/0.9664 = 7,761$.

62. Correct answer: B.

B is correct. The equation below is often called the “covered interest arbitrage relationship” because if it is not satisfied, a risk-free arbitrage opportunity exists. It is based on the required equivalence of the two possible investment paths: if the two paths do not produce the same terminal result, an arbitrage profit exists.

$$(1 + i_d) = S_{f/d}(1 + i_j)\left(\frac{1}{F_{f/d}}\right)$$

where

$S_{f/d}$ =Spot rate: number of units of foreign currency (price currency) per one unit of domestic currency

$F_{f/d}$ = Forward rate: number of units of foreign currency (price currency) per one unit of domestic currency

i_d = Domestic interest rate

i_j = Foreign interest rate

The left-hand side is 1 plus the return that is earned domestically. The right-hand side represents 1 plus the return from converting to foreign currency at the spot rate, investing at the foreign rate, and converting back to domestic currency using the forward rate.

The arbitrage profit is the right side of the equation minus the left side.

Left Side of Equation: $\text{BRL}500,000 \times (1 + 0.041) = \text{BRL}520,500$

Right Side of Equation

Step	Transaction	Explanation
1	$\text{BRL}500,000 \times (1/2.1128\text{AUD/BRL}) = \text{AUD}236,653$	Convert domestic to foreign
2	$\text{AUD}236,653 \times (1.031) = \text{AUD}243,989$	Invest foreign at foreign rate
3	$\text{AUD}243,989 \times 2.1388 = \text{BRL}521,844$	Convert foreign to domestic

Arbitrage profit = $\text{BRL}521,844 - \text{BRL}520,500 = \text{BRL}1,344$

A is incorrect. The right side of the equation uses inverted exchange rates in Steps One and Three and 4.1% in Step Two.

$$\text{Step One: } \text{BRL}500,000 \times (2.1128 \text{ AUD/BRL}) = \text{AUD}1,056,400$$

$$\text{Step Two: } \text{AUD}1,056,400 \times (1.041) = \text{AUD}1,099,712$$

$$\text{Step Three: } \text{AUD}1,099,712 \times (1/2.1388) = \text{BRL}514,173$$

$$\text{Arbitrage profit} = \text{BRL}514,173 \text{ (right side above)} - \text{BRL}520,500 \text{ (left side above)} = -6,327$$

C is incorrect. The right side of the equation uses 4.1% and thus 1.041 incorrectly in Step Two.

$$\text{Step One: } \text{BRL}500,000 \times (1/2.1128 \text{ AUD/BRL}) = \text{AUD}236,653$$

$$\text{Step Two: } \text{AUD}236,653 \times (1.041) = \text{AUD}246,355$$

$$\text{Step Three: } \text{AUD}246,355 \times 2.1388 = \text{BRL}526,905$$

$$\text{Arbitrage profit} = \text{BRL}526,905 \text{ (right side above)} - \text{BRL}520,500 \text{ (left side above)} = 6,405$$

63. Correct answer: B.

B is correct. In a CBS, the monetary authority has an obligation to maintain 100% foreign currency reserves against the monetary base. It therefore cannot lend to troubled financial institutions. As long as the country under a fixed parity regime maintains its exchange peg, the central bank can serve as a lender of last resort.

A is incorrect. It is the fixed-rate system that can use a basket of currencies for the peg.

C is incorrect. In a fixed parity system the monetary authority has a discretionary target level of reserves, but in a CBS it does not because there is a commitment to exchange domestic currency for a specified foreign currency at a fixed exchange rate.

Questions 64~90 Relate to Financial Statement Analysis**64. Correct answer: C.**

C is correct. The statement of changes in equity reports the changes in the components of shareholders' equity over the year, which would include the retained earnings account.

A is incorrect. The net income determined in the calculation of comprehensive income is a component of the change in retained earnings, but there are other changes that may also have occurred (the payment of dividends, for example) that are not included on the statement of comprehensive income.

B is incorrect. Although the year-end balances of retained earnings may be reported on the statement of financial position (depending on if the company breaks out the components of shareholders' equity), it would not detail the changes over the year.

65. Correct answer: B.

B is correct. During the process data phase, an analyst will produce a variety of reports and documents based on the information collected. These may include common-size statements, ratios and graphs, forecasts, adjusted statements, and analytical results.

A is incorrect. The statement of purpose is prepared during the articulation phase.

C is incorrect. The statement of cash flows is a source of information for the analyst.

66. Correct answer: B.

B is correct. The two fundamental characteristics that contribute to the usefulness of financial information in decision making are relevance and faithful representation. Accrual accounting is not a qualitative characteristic; it is an underlying assumption.

A is incorrect. Faithful representation is one of the six qualitative characteristics that contribute to the usefulness of financial information in decision making under the IFRS framework.

C is incorrect. Comparability is one of the six qualitative characteristics that contribute to the usefulness of financial information in decision making under the IFRS framework.

67. Correct answer: B.

B is correct. The two main types of long-lived assets whose costs are not allocated over time are

land and those intangible assets with indefinite useful lives.

A is incorrect because a company records an estimate of uncollectible amounts as an expense on the income statement, not as a direct reduction of revenues.

C is incorrect because, under the matching principle, at the time revenue is recognized on a sale, a company is required to record an estimate of how much of the revenue will ultimately be uncollectible.

68. Correct answer: A.

A is correct. The appropriate base for a common-size income statement is revenue. As such, the value used for research and development expenses is $\$12 \text{ million} / \$282 \text{ million} \times 100 = 4.25\%$.

B is incorrect because it uses total assets as a base: $12/145 \times 100 = 8.28\%$. This is appropriate for common-size balance sheets.

C is incorrect because it uses total expenses as a base: $12/241 \times 100 = 4.97\%$.

69. Correct answer: A.

A is correct. Given that comprehensive income includes net income and both other revenue and expense items that are excluded from the net income calculation (other comprehensive income), then the company's comprehensive income is:

$$£65 \text{ million} - £5 \text{ million} = £60 \text{ million.}$$

C is incorrect because £53 million results from incorrectly subtracting £7 million in common stock dividends from comprehensive income:

$$£65 \text{ million} - £5 \text{ million} - £7 \text{ million} = £53 \text{ million}$$

B is incorrect because £5 million of other net expense items excluded from the net income calculation is other comprehensive income and it should be subtracted from net income when calculating the company's comprehensive income.

70. Correct answer: A.

A is correct. The balance sheet enables an analyst to evaluate a company's liquidity, solvency, and overall financial position. It discloses what an entity owns, what it owes, and what the owners' claims are at a specific point in time.

B is incorrect. The cash flow statement provides information about a company's cash receipts and payments during a period. The balance sheet reports a total amount for cash and cash equivalents at a specific point in time, but it does not provide the underlying detail on the receipts and payments made during the period.

C is incorrect. The income statement communicates how much revenue a company generates during a period and what costs it incurred in connection with that revenue. The balance sheet reports earnings, but it does not provide detail to communicate how much revenue a company generated during a period.

71. Correct answer: A.

A is correct. Deferred tax liabilities result when, for a given period, taxable income and the associated income tax payable are less than the reported financial statement income before taxes and the associated income tax expense.

B is incorrect because if items of expense are included in financial statement income in earlier periods than those for which taxable income is reported, then the financial statement income and associated reported income tax expense will be less than taxable income and actual income tax payable. A deferred tax liability occurs only in the opposite case, when taxable income and income tax payable are smaller. Deferred tax liabilities result from timing differences between financial statement income and taxable income when taxable income is lower than financial statement income, not higher.

C is incorrect because straight-line depreciation methods result in lower depreciation expense than accelerated methods. This approach would produce higher taxable income than financial statement income, with no resulting deferred tax liability.

72. Correct answer: B.

B is correct. First determine current assets, where CA = Current assets, CL = Current liabilities, WC = Working capital, and CR = Current ratio.

$$CR = CA/CL = 1.75$$

$$CL = CA/1.75$$

$$WC = CA - CL$$

$$60 = CA - CA/1.75$$

$$60 = 0.75/1.75 \times CA$$

$$CA = 140$$

Then solve for total assets and determine financial leverage:

Metric	
Current assets	\$140 million
Non-current assets	+ \$235 million
Total assets	\$375 million
Equity	\$170 million
Financial leverage = Total assets/Equity	2.2

A is incorrect. Instead of calculating total assets, the sum of non-current assets and working capital was used:

Metric (all \$ amounts in millions)	
Working capital	60
Non-current assets	+ 235
Incorrect total assets	295
Equity	170
Financial leverage = Total assets/Equity	1.7

C is incorrect. Instead of calculating financial leverage, total liabilities to equity was calculated:

Metric (all \$ amounts in millions)	
Total assets per calculation above	375
Less: Equity	-170
Total liabilities	205
Incorrect Financial leverage calculation (Total liabilities/Equity)	1.2

73. Correct answer: A.

A is correct. Significant non-cash investing and financing transactions, such as purchasing a capital asset by issuing shares, are required to be disclosed, either in a separate note or a supplementary schedule to the cash flow statement.

B is incorrect. Because no cash is involved in the transaction, non-cash investing and financing activities are not incorporated as inflows and outflows on the cash flow statement.

C is incorrect. Because no cash is involved in the transaction, non-cash investing and financing activities are not incorporated as inflows and outflows on the cash flow statement.

74. Correct answer: B.

B is correct. The direct method cash flow statement presents specific operating cash flows by source and use.

A is incorrect because the indirect method starts with net income and presents clearly the relationship between net income and operating cash flows.

C is incorrect because the indirect method cash flow statement adjusts for non-cash items, not the direct method

75. Correct answer: A.

A is correct.

Cash return on assets = (Cash flow from operations/Average total assets)

$$\frac{600}{\frac{1}{2} \times (6,000 + 4,000)} = 12\%$$

B is incorrect. It uses cash flow from operations (CFO)/ending total assets in the denominator, OR free cash flow (FCF)/book value.

Incorrect cash return on assets = 10%

CFO/Ending total assets = 600/6,000

FCF/Book value = 300/3,000

C is incorrect. It incorrectly uses net income plus depreciation in the numerator OR uses cash flow from operations (CFO) + ending cash balance in the numerator.

Incorrect cash return on assets = 13%

(Net income + Depreciation)/Average total assets = 650/5,000

(CFO + Ending cash balance)/Average total assets = 650/5,000

76. Correct answer: B.

B is correct. Leverage is a component of the return on equity equation under the DuPont Analysis.

If leverage decreases, so will return on equity.

ROE = Tax burden × Interest burden × Earnings before interest and taxes margin × Total asset turnover × Leverage

A is incorrect. The tax burden is one of the components of ROE in the 5-factor model:

$$\text{Tax burden} = \text{Net income}/\text{EBT} = (\text{EBT} - \text{Tax})/\text{EBT} = 1 - \text{Tax}/\text{EBT} = 1 - \text{Effective tax rate}$$

A lower tax rate means the company keeps more of its pre-tax profits (and has a higher tax burden). A lower tax rate increases net income and increases ROE: an increase in any of the 5 components increases ROE.

C is incorrect. Days of sales outstanding is a component of the asset turnover measure. All else equal, if days of sales outstanding decreased, total asset turnover would increase. If asset turnover increases, so will return on equity.

77. Correct answer: B.

B is correct. First, earnings before interest and taxes (EBIT) must be calculated, then the fixed charge coverage ratio.

$$\text{EBIT} = \text{Net income} + \text{Interest expense} + \text{Income tax expense}$$

$$= 3,400 + 1,000 + 1,100 = 5,500$$

$$\text{Fixed charge coverage ratio} = (\text{EBIT} + \text{Lease payments})/(\text{Interest payments} + \text{Lease payments})$$

$$= (5,500 + 500)/(1,000 + 500)$$

$$= 6,000/1,500$$

$$= 4.00$$

A is incorrect. It omits lease payments in the numerator.

$$\text{Numerator: EBIT} = 5,500$$

$$\text{Denominator: Interest payments} + \text{Lease payments} = 1,000 + 500 = 1,500$$

$$\text{Incorrect fixed charge coverage ratio} = 5,500/1,500 = 3.67$$

C is incorrect. It forgot to use EBIT; this is net income/fixed charges.

$$\text{Numerator: Net income} = 3,400$$

$$\text{Denominator: Interest payments} + \text{Lease payments} = 1,000 + 500 = 1,500$$

$$\text{Incorrect fixed charge coverage ratio} = 3,400/1,500 = 2.27$$

78. Correct answer: C.

C is correct. Under FIFO, the oldest units are sold first, thus for the six units sold FIFO, cost of

sales is \$3,850, as follows: 1 unit at \$600 + 5 units at 650 = \$3,850.

A is incorrect. It is the cost of goods available for sale not the cost of goods sold: 1 unit at \$600 + 5 units at 650 + 3 units at 680 = \$5,890.

B is incorrect. It used the \$680 most recent cost for all 6,000 units sold: $6 \times \$680 = \$4,080$.

79. Correct answer: C.

C is correct.

$$\text{Net income (LIFO)} = \text{Net profit margin} \times \text{Sales}$$

$$= 0.049 \times 2,125$$

$$= 104.1$$

$$\text{Change in LIFO reserve} = \text{LIFO reserve 2014} - \text{LIFO reserve 2013}$$

$$= 82 - 64$$

$$= 18$$

$$\text{Net income (FIFO)} = \text{LIFO net income} + \text{Change in LIFO reserve} \times (1 - \text{Tax rate})$$

$$= 104.1 + 18 \times (1 - 0.30)$$

$$= 116.7$$

$$\text{Increase in net income} = 116.7 - 104.1$$

$$= 12.6$$

More simply, the difference is the change in the LIFO reserve, after tax.

$$18 \times (1 - 0.3) = 12.6$$

A is incorrect. It ignores taxes on change in LIFO reserve.

$$\text{Net income (LIFO)} = \text{Net profit margin} \times \text{Sales}$$

$$= 0.049 \times 2,125$$

$$= 104.1$$

$$\text{Change in LIFO reserve} = \text{LIFO reserve 2014} - \text{LIFO reserve 2013}$$

$$= 82 - 64$$

$$= 18$$

$$\text{Net income (FIFO)} = \text{Net income (LIFO)} + \text{change in LIFO reserve}$$

$$= 104.1 + 18$$

$$= 122.1$$

$$\text{Increase in net income} = 122.1 - 104.1$$

$$= 18$$

Or more simply, 18: the change in LIFO reserve

B is incorrect. It applies the increase on the entire LIFO reserve (after tax).

$$\text{Net income (LIFO)} = \text{Net profit margin} \times \text{Sales}$$

$$= 0.049 \times 2,125$$

$$= 104.1$$

$$\text{Net income (FIFO)} = \text{Net income (LIFO)} + \text{LIFO reserve} \times (1 - \text{Tax rate})$$

$$= 104.1 + 82 \times (1 - 0.30)$$

$$= 161.5$$

$$\text{Increase in net income} = 161.5 - 104.1$$

$$= 57.4$$

Or more simply, $82 \times (1 - 0.30)$: LIFO reserve after tax

80. Correct answer: B.

B is correct. Under IFRS, inventory is carried at the lower of cost and net realizable value (NRV).

The company would logically choose to sell the batch at its highest realizable value.

Cost	Given	\$18,000
NRV		
Estimated selling price	\$11,000	
Less: Costs to sell	\$0	
Less: Costs to prepare inventory for sale	\$3,000	\$8,000
Lower of cost or NRV		\$8,000

A is incorrect. It is the current condition of the inventory plus the costs for additional processing:

$$6000 + 3,000 = 9,000.$$

C is incorrect. This choice assumes that the company would sell the inventory without further processing for \$11,000. This is not a reasonable choice because the benefits of further processing outweigh the costs.

81. Correct answer: C.

C is correct. Under the double declining balance approach, the depreciation rate applied to the carrying amount is double the depreciation rate for the straight-line method. Because the rate for

the straight-line method is 20% (1/5), the double declining rate is 40%. Depreciation expense is recorded until the net book value (NBV) reaches the residual value.

	Year 1	Year 2	Year 3
Opening NBV	\$1,800,000	\$1,080,000	\$648,000
Depreciation expense (40% of opening NBV)	720,000	432,000	148,000
Ending NBV	1,080,000	648,000	500,000

A is incorrect. This is the double declining approach, but with the residual value incorrectly deducted from the depreciation base:

	Year 1	Year 2	Year 3
Opening carrying value	1,300,000*	780,000	468,000
Depreciation expense (40% of opening NBV)	520,000	312,000	187,200
Ending carrying value	780,000	468,000	512,000

* incorrectly calculated net of the residual value

B is incorrect. This is the full double declining depreciation expense that would have been recorded if the residual value had been below \$388,800:

	Year 1	Year 2	Year 3
Opening net book value (NBV)	\$1,800,000	\$1,080,000	\$648,000
Depreciation expense (40% of opening NBV)	720,000	432,000	259,200
Ending net book value	1,080,000	648,000	388,800

82. Correct answer: A.

A is correct. The company will report an impairment loss of \$13.8 million on its income statement. Under US GAAP, the facilities fail the recoverability test: the net book value cannot be recovered from undiscounted cash flows (7 years \times \$3 = \$21 < \$28.4). Therefore, the asset is impaired and should be written down to its fair value.

Fair Value is the present value (PV) of future benefits: (N = 7; i = 10; PMT = 3); PV = 14.6

Impairment Loss is Carrying value – Fair value = 28.4 – 14.6 = 13.8 to be reported on the income statement.

B is incorrect. It was determined with no discounting of future benefits, resulting in an incorrect impairment charge: $28.4 - 3 \times 7 = 7.4$.

C is incorrect. This is a non-cash item and does not affect cash from operations.

83. Correct answer: B.

B is correct. Licenses will have the largest dollar impairment charge on the income statement due to the size of the implied impairment charge, which is calculated as: Accumulated impairment losses and amortization as of 31 December 2019 – (Accumulated impairment losses and amortization as of 31 December 2019 + Exchange movements + Amortization charge for year + Net Additions (Disposals)). In this case the largest impairment loss that will be reported is due to licenses. Impairment charge due to licenses = $10,856 - (8,243 + 821 + 1,244 - 25) = 573$.

A is incorrect because the amount of the impairment charge due to computer software is less than that of licenses. The computer software impairment charge for 20X2 in dollars = $8,214 - (5,257 + 334 + 2,102) = 521$.

C is incorrect because the amount of the impairment charge due to goodwill is less than that of licenses. The goodwill impairment charge for 20X2 in dollars = $73,194 - (65,321 + 7,324) = 549$.

84. Correct answer: C.

C is correct. A decrease in the tax rate will result in a decrease in the previously reported amounts of deferred tax assets. That is, the value of the future tax assets, based on the new lower rate, is reduced for offsetting future tax payments.

A is incorrect. The change would affect not only the current year's reported income tax expense but also any amounts previously established on the balance sheet.

B is incorrect. The value of the future benefits decreases, not increases.

85. Correct answer: B.

B is correct. Negative covenants require that a borrower not take certain actions. The requirement to seek the lender's approval before paying dividends is an example of a negative covenant. The other two are affirmative covenants.

A is incorrect. This is an affirmative covenant. The bank would want to ensure that the ships, or collateral for the loan, are adequately insured.

C is incorrect. This is an affirmative covenant. Maintaining a minimum level of working capital is often a covenant to ensure the company has adequate levels of liquidity to make the interest payments.

86. Correct answer: B.

B is correct. A lessor reports a profit on the sale of the asset on the income statement when the present value of the lease payments exceeds the carrying amount of the leased asset (sales-type lease).

A is incorrect because the interest portion of the lease payment is either an operating or financing cash outflow under IFRS, and is an operating cash outflow under US GAAP.

C is incorrect because the impact on a lessor's balance sheet is the same for both a direct-financing and a sales-type lease.

87. Correct answer: B.

B is correct. Conservative accounting choices decrease the company's reported performance and financial position in the current period and may increase its reported performance and financial position in later periods.

A is incorrect because aggressive accounting choices have the opposite effect of increasing the company's reported performance and financial position in the current period and may decrease its reported performance and financial position in later periods.

C is incorrect because conservative accounting such as decreasing current reported performance and increasing later reported performance does not typically create a sustainability issue.

88. Correct answer: A.

A is correct. The exclusion of recurring items from non-GAAP financial measures is strictly prohibited by the SEC and should raise concerns that additional analysis is needed.

B is incorrect. If a company uses non-GAAP measures in its SEC filings, it must display the comparable GAAP measure with equal prominence and provide a reconciliation between the two.

C is incorrect. LIFO reporting provides sufficient information in the Notes to convert from LIFO to FIFO so a formal change should not alter an analyst's opinion about the company.

89. Correct answer: B.

B is correct. The term "war chest" refers to large cash balances that a company accumulates,

normally used to finance strategic acquisitions.

A is incorrect. Recapitalization involves restructuring a company's equity capital, often as a response to financial distress. At this point, the company is usually very short of cash, not flush with cash.

C is incorrect. Companies that buy back large blocks of shares are often looking for a way to distribute excess cash accumulations, rather than actively trying to accumulate it. The term "war chests" is associated with a more purposeful accumulation.

90. Correct answer: C.

C is correct. As a domestic company, the industrial security company is the most appropriate to forecast using historical performance. It likely has stable earnings from its stable client list and is unaffected by non-domestic markets, currency changes, or changing prices. For the mining company, the volatility of commodity prices could make its future performance differ from past performance. For the international personal care company, the additional risks associated with foreign markets and currencies could be significant.

A is incorrect. The volatility of commodity prices could make its future performance differ from past performance. As such, historical operating profits may not be indicative of future operating profits.

B is incorrect. The additional risks associated with foreign markets and currencies could be significant. As such, historical operating profits may not be indicative of future operating profits.

Questions 91~108 Relate to Corporate Issuers**91. Correct answer: C.**

C is correct. In good corporate governance practices the audit and remuneration/compensation committees should be composed entirely of independent board members. Other committees such as environmental health and safety may have members from executive management.

A is incorrect. The remuneration/compensation committee should be composed entirely of independent board members.

B is incorrect. The audit committee should be composed entirely of independent board members.

92. Correct answer: A.

A is correct. Plans that link compensation to the factors that drive overall corporate performance are well structured because they create alignment between shareholder and executive objectives.

B is incorrect. Plans that exhibit little variation in results from year to year may be failing to distinguish strong from weak performance.

C is incorrect. Compensation plans should result in comparable remuneration for comparable companies with comparable performance.

93. Correct answer: B.

B is correct. The NPV is calculated as follows:

$$NPV = \sum_{t=0}^N \frac{CF_t}{(1+r)^t}$$

where cost of capital (r) is 12 percent

$$\begin{aligned} \text{Investment 1: } NPV_1 &= -80 + \frac{0}{(1.12)^1} + \frac{0}{(1.12)^2} + \frac{60}{(1.12)^3} + \frac{60}{(1.12)^4} \\ &= \$0.84 \end{aligned}$$

$$\begin{aligned} \text{Investment 2: } NPV_2 &= -125 + \frac{35}{(1.12)^1} + \frac{60}{(1.12)^2} + \frac{80}{(1.12)^3} + \frac{-20}{(1.12)^4} \\ &= -\$1.69 \end{aligned}$$

$$\text{Investment 3: } NPV_3 = -100 + \frac{11}{0.12}$$

= -\$8.33, where the present value of a perpetuity is $\frac{CF}{r}$ with CF being the annual cash

flow and r the discount rate

At the opportunity cost of capital of 12 percent, investment 1 is the only investment with positive NPV.

A is incorrect. As per table, investment 2 has a negative NPV and should be rejected.

C is incorrect. As per table, both investments 2 and 3 have negative NPVs and should be rejected.

94. Correct answer: C.

C is correct. Investments related to new products or services expose the company to even more uncertainties than expansion projects. These decisions are more complex and will involve more people in the decision-making process.

A is incorrect. Replacement of worn out equipment is simply an improvement to the existing project with recurring revenues.

B is incorrect. Investments related to new products or services expose the company to even more uncertainties than expansion projects. These decisions are more complex and will involve more people in the decision-making process

95. Correct answer: A.

A is correct because an abandonment option is a type of sizing option. "Sizing options. If after investing the company can abandon the investment if the financial results are disappointing, it has an abandonment option. At some future date, if the cash flow from abandoning an investment exceeds the present value of the cash flows from continuing the investment, the company should exercise the abandonment option."

B is incorrect because an abandonment option is a type of sizing option, not timing option. "Timing options. Instead of investing now, the company can delay investing. Delaying an investment and basing the decision on hopefully improved information that you might have in, say, a year could help improve the NPV of the projects selected."

C is incorrect because an abandonment option is a type of sizing option, not flexibility option. "Flexibility options. Once an investment is made, operational flexibilities besides abandonment or expansion may be available... Management may be able to exercise a price-setting option. By increasing prices, the company could benefit from the excess demand, which it cannot do by

increasing production. There are also production-flexibility options, which offer the operational flexibility to alter production when demand varies from what is forecast."

96. Correct answer: A.

A is correct. This is a source of external financing for a company. "Secured ('asset-based') loans are loans in which the lender requires the company to provide collateral in the form of an asset, such as a fixed asset that the company owns or high-quality receivables and inventory...For example, a company can use its accounts receivable to generate cash flow through the assignment of accounts receivable, which is the use of these receivables as collateral for a loan."

B is incorrect because "[c]ompanies can generate internal financing and liquidity from shorter-term operating activities in several ways. These include...converting liquid assets such as receivables, inventories, and marketable securities to cash."

C is incorrect because "[c]ompanies can generate internal financing and liquidity from shorter-term operating activities in several ways. These include...extending a company's payables period."

97. Correct answer: B.

B is correct because the quick ratio = (cash + short term securities + A/R)/Current Liabilities

$$\text{Company 1 quick ratio} = (50 + 30)/60 = 1.333$$

$$\text{Company 2 quick ratio} = (60 + 70)/90 = 1.444$$

$$\text{Company 3 quick ratio} = (90 + 40)/100 = 1.300$$

A is incorrect because Company 1 has the highest current ratio not quick ratio:

$$\text{Current ratio} = (\text{cash} + \text{short term securities} + \text{A/R} + \text{Inventories})/\text{Current Liabilities}$$

$$\text{Company 1 current ratio} = (50 + 30 + 40)/60 = 2.000$$

$$\text{Company 2 current ratio} = (60 + 70 + 20)/90 = 1.667$$

$$\text{Company 3 current ratio} = (90 + 40 + 60)/100 = 1.900$$

C is incorrect because Company 3 has the highest cash ratio, not quick ratio:

$$\text{Cash ratio} = (\text{cash} + \text{short term securities})/\text{Current Liabilities}$$

$$\text{Company 1 cash ratio} = 50/60 = 0.8333$$

$$\text{Company 2 cash ratio} = 60/90 = 0.6667$$

Company 3 cash ratio = $90/100 = 0.900$

98. Correct answer: B.

B is correct because "[p]assive strategies are characterized by steady, often routine rollovers of borrowings for the same amount of funds each time, without much comparison shopping...[On the other hand,] [a]ctive strategies are usually more flexible and reflect planning, reliable forecasting, and comparison pricing. With active strategies, borrowers are more in control and do not fall into the rollover "trap" that is possible with passive strategies."

A is incorrect because "[p]assive strategies usually involve minimal activity, with one source or type of borrowing and with little (if any) planning... Passive strategies are characterized by steady, often routine rollovers of borrowings for the same amount of funds each time, without much comparison shopping."

C is incorrect because "[p]assive strategies usually involve minimal activity, with one source or type of borrowing and with little (if any) planning... Passive strategies are characterized by steady, often routine rollovers of borrowings for the same amount of funds each time, without much comparison shopping. Passive strategies might also arise when borrowing is restricted, such as when borrowers are limited to one or two lenders by agreement (e.g., in a secured loan arrangement)."

99. Correct answer: B.

B is correct. $WACC = w_d r_d(1 - t) + w_p r_p + w_e r_e = [0.12 \times (1 - 0.40) + 0.17 + 0.20]/3 = 14.73\%$.

A is incorrect because tax effect is miscalculated: $[0.12 \times 0.40 + 0.17 + 0.20]/3 = 13.93\%$.

C is incorrect because tax effect is ignored: $[0.12 + 0.17 + 0.20]/3 = 16.33\%$.

100. Correct answer: B.

B is correct.

$$\beta_{\text{equity}} = \beta_{\text{asset}} \times [1 + (1 - \text{tax rate}) \times D/E]$$

If the tax rate increases, then the bracketed term $(1 - \text{tax rate})$ decreases, making the equity beta decrease because the asset beta is unchanged.

A is incorrect because the equity beta decreases.

C is incorrect because the equity beta decreases.

101. Correct answer: C.

C is correct because the cost of preferred stock is: $r_P = D_P/P_P$

Where P_P = the current preferred stock price per share

D_P = the preferred stock dividend per share

r_P = the cost of preferred stock

$$r_P = 1.30/24.75 = 0.052525 \approx 5.25\%.$$

A is incorrect because the tax rate is used in the calculation. "Unlike interest on debt, the dividend on preferred stock is not tax-deductible by the company; therefore, there is no adjustment to the cost for taxes."

$$r_P \neq 1.30(1 - t)/24.75 = 1.17/24.75 = 0.047273 \approx 4.73\%.$$

B is incorrect because par value is used instead of market value.

$$r_P \neq 1.30/25.00 = 0.052000 \approx 5.20\%.$$

102. Correct answer: C.

C is correct because a mature company "becomes able to support low-cost debt, often on an unsecured basis. From the company's perspective, debt financing is likely to be more attractive than higher-cost equity financing. In practice, large, mature public companies commonly employ significant leverage, although many seek to maintain an investment-grade rating in order to preserve maximum financial flexibility."

A is incorrect because "[a]t this early stage, debt capital is typically not available or available but very expensive. Most lenders require stable and positive cash flow to service debt and/or collateral to secure it. An early-stage company often has neither, making it a high-risk prospect to lenders."

B is incorrect because while debt is used at this stage it is less than that of the mature stage. "Many growth companies use debt conservatively in order to preserve operational and financial flexibility and minimize the risk of financial distress. Equity remains the predominant source of capital."

103. Correct answer: C.

C is correct because an analyst can "[e]xamine trends in the company's capital structure or statements by management regarding capital structure policy to infer the target capital structure."

A is incorrect because book value is used instead of market value. "Assume the company's current capital structure, at market value weights for the components, represents the company's target capital structure."

B is incorrect because an analyst can "[u]se averages of comparable companies' capital structures [not a diversified group] as the target capital structure."

104. Correct answer: C.

C is correct because "[a]symmetric information (an unequal distribution of information) arises from the fact that managers have more information about a company's performance and prospects (including future investment opportunities) than do outsiders, such as owners and creditors. Whereas all companies have a certain level of asymmetric information, companies with comparatively high asymmetry in information include those with complex products. These include high-tech companies...Providers of both debt and equity capital demand higher returns from companies with higher asymmetry in information because there is greater potential for conflicts of interest."

A is incorrect because "[a]symmetric information (an unequal distribution of information) arises from the fact that managers have more information about a company's performance and prospects (including future investment opportunities) than do outsiders, such as owners and creditors. Whereas all companies have a certain level of asymmetric information, companies with comparatively high asymmetry in information include those with complex products. These include high-tech companies."

B is incorrect because "[a]symmetric information (an unequal distribution of information) arises from the fact that managers have more information about a company's performance and prospects (including future investment opportunities) than do outsiders, such as owners and creditors. Whereas all companies have a certain level of asymmetric information, companies with comparatively high asymmetry in information include those with complex products. These include high-tech companies."

105. Correct answer: A.

A is correct because "preferred shareholders are vulnerable to decisions that increase financial leverage and risk over the long term...Preferred shareholders might be concerned that the new policy [increased long-term leverage] could gradually erode the company's capacity to pay preferred dividends."

B is incorrect because since the suppliers of raw materials to the manufacturer are numerous and large, they are unlikely to be concerned that a small client like the manufacturer referred to here is planning to increase leverage. If the manufacturer experiences financial difficulties, the impact on these suppliers would be small because the proportion of their sales that would be impacted would also be small.

C is incorrect because "senior secured debt holders might be unconcerned [about an increase in long-term leverage], particularly for debt maturing relatively soon, since there is minimal default risk."

106. Correct answer: A.

A is correct.

$$\text{DOL} = \frac{\text{quantity} \times \text{contribution margin}}{(\text{quantity} \times \text{contribution margin} - \text{fixed costs})}$$

$$\text{DOL (100,000 units)} = \frac{\$20 \times 100,000}{(\$20 \times 100,000 - \$500,000)} = 1.333$$

$$\text{DOL (200,000 units)} = \frac{\$20 \times 200,000}{(\$20 \times 200,000 - \$500,000)} = 1.143$$

$$\text{DOL (300,000 units)} = \frac{\$20 \times 300,000}{(\$20 \times 300,000 - \$500,000)} = 1.091$$

The DOL is lowest at the 300,000 unit production level.

C is incorrect because the DOL is lowest at the 300,000 unit level.

B is incorrect because the DOL is lowest at the 300,000 unit level.

107. Correct answer: C.

C is correct because "[u]sing financial leverage generally increases the variability of return on equity (net income divided by shareholders' equity). In addition, its use by a profitable company may increase the level of return on equity." The smaller the proportion of debt in the financing mix

of a business, the less earnings will be magnified upward in improving economic times which translates into lower ROE levels for various levels of expected operating earning, and consequently, a lower ROE variability.

A is incorrect because the smaller the proportion of debt in the financing mix of a business, the less earnings will be magnified upward in improving economic times which translates into lower ROE levels for various levels of expected operating earning, and consequently, a lower ROE variability, not a higher one.

B is incorrect because the smaller the proportion of debt in the financing mix of a business, the less earnings will be magnified upward in improving economic times which translates into lower ROE levels for various levels of expected operating earning, not higher.

108. Correct answer: C.

C is correct because " $Q_{BE} = (F + C)/(P - V)$ " where F = fixed operating costs; C = fixed financial costs; P = price per unit; and V = variable cost per unit. Also, "[t]he per unit contribution margin is the amount that each unit sold contributes to covering fixed costs—that is, the difference between the price per unit and the variable cost per unit. That difference multiplied by the quantity sold is the contribution margin..." Hence the contribution margin is equal to $Q(P - V)$. Here $Q = 1,000,000$ and $Q(P - V) = 10,000,000$; so $(P - V) = \$10$. Hence the breakeven number of units $= (F + C)/(P - V) = (\$200,000 + \$100,000)/\$10 = 30,000$

A is incorrect because the numerator of the expression for the break-even number of units is incorrectly calculated as $F - C$ rather than $F + C$. Break-even number of units $\hat{=}$ $(F - C) / (P + V) = (\$200,000 - \$100,000)/\$10 = 10,000$

B is incorrect because this is the operating break-even number of units: " $Q_{OBE} = F/(P - V)$..." Here $Q = 1,000,000$ and $Q(P - V) = 10,000,000$; so $(P - V) = \$10$. Hence the operating breakeven number of units $= \$200,000/\$10 = 20,000$

Questions 109–128 Relate to Equity Investments**109. Correct answer: A.**

A is correct. Real assets are characterized by illiquidity, not high liquidity. The heterogeneity of real assets, their illiquidity, and the substantial costs of managing them are all factors that complicate the valuation of real assets.

B is incorrect. Real assets are characterized by illiquidity, not high liquidity.

C is incorrect. Real assets are characterized by heterogeneity, not homogeneity.

110. Correct answer: C.

C is correct.

Total purchase value = Purchase price × Shares purchased	$\$22 \times 700$	\$15,400
Minus initial equity = Total purchase value/Leverage ratio	$\$15,400/1.6$	9,625
Amount borrowed = Total purchase value – Initial equity	$\$15,400 - \$9,625$	\$5,775
Margin interest paid = Call money rate × Amount borrowed	$4\% \times \$5,775$	\$231
Dividend income = Dividend per share × Shares purchased	$\$0.60 \times 700$	\$420
Total return on the initial equity	$12\% \times \$9,625$	\$1,155
Gain from price appreciation = Total return – Dividend + Margin interest	$\$1,155 - \$420 + \$231$	\$966
Price at which investor sold the stock = Gain from price appreciation per share + Purchase price	$(\$966/700) + \22	\$23.38
A is incorrect because it ignores the margin interest.		
Gain from price appreciation = Total return – Dividend	$\$1,155 - \420	\$735
Price at which investor sold the stock = Gain from price appreciation per share + Purchase price	$(\$735/700) + \22	\$23.05
B is incorrect because it ignores the dividend amount.		
Gain from price appreciation = Total return + Margin interest	$\$1,155 + \231	\$1,386
Price at which investor sold the stock = Gain from price appreciation per share + Purchase price	$(\$1,386/700) + \22	\$23.98

111. Correct answer: A.

A is correct because "[a] limit order conveys almost the same instruction [as market order]: Obtain

the best price immediately available, but in no event accept a price higher than a specified limit price when buying or accept a price lower than a specified limit price when selling."

B is incorrect because "[a] market order instructs the broker or exchange to obtain the best price immediately available when filling the order." The trader might purchase it at more than \$58 by using market order.

C is incorrect because a stop-buy order is to buy at a price specified above the market price. "Because stop-sell orders become valid when prices are falling and stop-buy orders become valid when prices are rising."

112. Correct answer: A.

A is correct. The value of the price return index is 998.1. The value calculations for the price return index and the total return index are based on the geometrical link of the respective series of index returns as follows:

$$\text{Value of price return index, } V_{\text{PRIT}} = V_{\text{PRI0}} (1 + \text{PR}_{I1})(1 + \text{PR}_{I2}) \dots (1 + \text{PR}_{IT})$$

$$\text{Value of total return index, } V_{\text{TRIT}} = V_{\text{TRI0}} (1 + \text{TR}_{I1})(1 + \text{TR}_{I2}) \dots (1 + \text{TR}_{IT})$$

Quarter	Quarterly Price Returns	Dividend Income	Cumulative Value of Price Return Index at Quarter End	Cumulative Value of Total Return Index at Quarter End
	(%)	(%)	(ending value)	(ending value)
1	3.0%	1.5%	$1,000(1.03) = 1,030.00$	$1,000(1.045) = 1,045.00$
2	2.0%	—	$1,000(1.03)(1.02) = 1,050.60$	$1,000(1.045)(1.02) =$ $1,065.90$
3	-5.0%	—	$1,000(1.03)(1.02)(0.95)$ = 998.07	$1,000(1.045)(1.02)(0.95) =$ 1,012.61

B is incorrect because the value of the total return index at the end of Q3 is 1,012.61 which is above 1,000 (*as per calculation above*).

C is incorrect because by the end of Q3, the total return is 1.26% whereas the price return is (0.2%) (*as per calculation above*).

113. Correct answer: C.

C is correct.

	Shares in Index	Start-of- Period Price (\$)	End-of-Period Price (\$)	Dividend per Share (\$)	Price Return (%)	Total Return (%)
Stock	(1)	(2)	(3)	(4)	$= (3)/(2) - 1$	$= [(3) + (4)]/(2) - 1$
A	600	40	37	2	-7.50%	-2.50%
B	500	50	52	1.5	4.00%	7.00%
Total return	$= [(-2.5 + 7)/2]$					2.25%

A is incorrect. It is the price return on an equal-weighted basis.

	Shares in Index	Start of Period Price (\$)	End of Period Price (\$)	Dividend per Share (\$)	Price Return (%)
Stock	(1)	(2)	(3)	(4)	$= (3)/(2) - 1$
A	600	40	37	2	-7.50%
B	500	50	52	1.5	4.00%
Total return	$= [(-7.5 + 4)/2]$				-1.75%

B is incorrect. It is the total return on price-weighted basis.

	Shares in index	Start of Period Price (\$)	End of Period Price (\$)	Dividend per Share (\$)	Total Return (%)	Start of Period Weight (%)	Price-Weighted Total Return (%)
Stock	(1)	(2)	(3)	(4)	(5) = [(3) + (4)]/(2) - 1	(6)	(5) × (6)
A	600	40	37	2	-2.50%	44%	-1.11%
B	500	50	52	1.5	7.00%	56%	3.89%
Total return	$= [(-1.11 + 3.89)/2]$						2.78%

114. Correct answer: C.

C is correct. Hedge fund companies are not required to report their performance to any party other than their investors. As a result, rather than index providers determining the constituents, the constituents determine the index.

A is incorrect. Commodity indexes are based upon futures contracts, not prices of the underlying commodities themselves.

B is incorrect. Commodity indexes consist of futures contracts. There is no market weighting mechanism.

115. Correct answer: A.

A is correct. In a highly efficient market, (1) market value reflects new information quickly and rationally, and (2) an asset's market value equals its intrinsic value. Therefore, after the announcement, the difference between a stock's market value and its intrinsic value will remain equal to zero because both market and intrinsic values adjust to reflect the unexpected news by the same amount and at the same time.

B is incorrect. In a highly efficient market, (1) market value reflects new information quickly and rationally, and (2) an asset's market value equals its intrinsic value. In an inefficient market, (1) the market value of a stock adjusts slowly to an unexpected news, and (2) there are probably discrepancies between market value and intrinsic value. Therefore, only in an inefficient market could the difference between market and intrinsic values decrease after the announcement of an unexpected positive news.

C is incorrect. In a highly efficient market, (1) market value reflects new information quickly and rationally, and (2) an asset's market value equals its intrinsic value. In an inefficient market, (1) the market value of a stock adjusts slowly to an unexpected news, and (2) there are probably discrepancies between market value and intrinsic value. Therefore, only in an inefficient market could the difference between market and intrinsic values increase after the announcement of an unexpected positive news.

116. Correct answer: C.

C is correct. The forms of market efficiency are as follows:

Forms of Market Efficiency	Market Prices Reflect:		
	Past Market Data	Public Information	Private Information
Weak	✓		
Semi-strong	✓	✓	
Strong	✓	✓	✓

If a test rejects the hypothesis that market prices reflect private information but does not reject the hypothesis that they reflect past market data and public information, then there is evidence that the form of market efficiency is semi-strong (because only past market data and public information

are reflected in market prices).

A is incorrect. Markets are weak-form efficient when market prices reflect past market data only.

B is incorrect. Markets are strong-form efficient when market prices reflect past market data, public information, and private information.

117. Correct answer: A.

A is correct. Herding occurs when investors trade on the same side of the market in the same securities, or when investors ignore their own private information and/or analysis and act as other investors do. Herding behavior has been advanced as a possible explanation of under-reaction and over-reaction in financial markets.

B is incorrect. If investors are overconfident, they overestimate their own ability to process and interpret information about a security.

C is incorrect. Loss aversion refers to the tendency of people to dislike losses more than they like comparable gains. This results in a strong preference for avoiding losses as opposed to achieving gains.

118. Correct answer: A.

A is correct. Convertible preference shares tend to exhibit less price volatility than the underlying common shares because the dividend payments are known and more stable.

B is incorrect. An opportunity to receive additional dividend if the company's profits exceed a pre-specified level is the benefit that accrues to the holders of participating preferred shares, not convertible preference shareholders.

C is incorrect. Preference dividends are fixed but, unlike interest payment on debt, they are not contractual obligations of the company.

119. Correct answer: C.

C is correct. The management of a public firm is under pressures to meet shorter-term demands, such as meeting quarterly sales and earnings projections from analysts. Private owners are thus better able to focus on longer-term value creation opportunities.

A is incorrect. By operating under public scrutiny, companies are incentivized to be more open in

terms of corporate governance and executive compensation to ensure that they are acting for the benefit of shareholders.

B is incorrect because public equity markets are much larger than private ones.

120. Correct answer: A.

A is correct. In the case of unsponsored DRs, the depository bank, not the investors in the DR, retains the voting rights.

B is incorrect because investors in sponsored DRs have the same rights as the direct owners of the common shares.

C is incorrect because the foreign firm does not maintain voting rights with DRs.

121. Correct answer: A.

A is correct. The impact of severe recessions usually reaches all parts of the economy and affects cyclical and defensive companies.

B is incorrect. Consumers do not tend to defer purchases from defensive companies during a recession.

C is incorrect. Cyclical companies underperform non-cyclical companies during economic recessions.

122. Correct answer: B.

B is correct. Companies in the same peer group can have different valuations depending on structure and competitiveness.

A is incorrect. Valuations may be of limited value when comparing companies that are exposed to different stages of the business cycle.

C is incorrect. To make a meaningful comparison of companies, analysts should make adjustments to the financial statements to lessen the impact that the finance subsidiaries have on the various financial metrics being compared.

123. Correct answer: A.

A is correct. An industry in growth stage is characterized by rising volumes, improving

profitability, falling prices, and relatively low competition among companies.

B is incorrect. In the mature stage there will be little or no growth and relatively stable demand for products.

C is incorrect. In the embryonic stage there will be slowing growth and high prices.

124. Correct answer: C.

C is correct. A corporate manager pursuing a cost leadership strategy must be able to invest in productivity-improving capital equipment for achieving cost controls and being able to offer products and services at lower prices than the competition.

A is incorrect. Offering products that are unique either in quality, type, or means of distribution is suitable for differentiation strategies.

B is incorrect. Having strong market research teams for product development and marketing is suitable for differentiation strategies.

125. Correct answer: A.

A is correct. The payment date can occur on a weekend or holiday unlike other pertinent dates, such as the ex-date and record date, which occur only on business days.

B is incorrect. See the above explanation.

C is incorrect. See the above explanation.

126. Correct answer: A.

A is correct. The Gordon growth model is most appropriate for valuing common stock of a dividend paying company that is mature and relatively insensitive to the business cycle or economic fluctuations.

B is incorrect. A three-stage dividend discount model would be most appropriate for a fairly young company that is just entering the growth phase.

C is incorrect. A two-stage dividend discount model would be appropriate for a company that is experiencing a higher than the sustainable growth rate.

127. Correct answer: C.

C is correct.

$$\text{Trailing P/E ratio} = \frac{\text{Current stock price}}{\text{Current earnings per share}} = \frac{35}{6} = 5.83$$

P/E ratio based on the Gordon growth dividend discount model

$$= \frac{D1/E1}{r-g} = \frac{(2.4 \times 1.08)/(6 \times 1.08)}{0.15-0.08} = 5.71$$

A is incorrect. P/E ratio based on the Gordon growth dividend discount model is greater than trailing P/E ratio.

B is incorrect. It uses earnings for next year to calculate the trailing P/E ratio.

$$\text{Trailing P/E ratio} = \frac{\text{Current stock price}}{\text{Current earnings per share}} = \frac{35}{6 \times 1.08} = 5.40$$

P/E ratio based on the Gordon growth dividend discount model

$$= \frac{D1/E1}{r-g} = \frac{(2.4 \times 1.08)/(6 \times 1.08)}{0.15-0.08} = 5.71$$

128. Correct answer: C.

C is correct. An advantage of EBITDA is that it is a proxy for operating cashflow because it excludes depreciation and amortization.

A is incorrect. The multiple can be negative if EBITDA is negative.

B is incorrect. The market value of debt is needed in valuing the equity since it should be deducted from the enterprise value and may be difficult to obtain.

Questions 129~148 Relate to Fixed Income**129. Correct answer: C.**

C is correct. Secured debt is backed by assets or financial guarantees pledged to ensure repayment in the event of default. Therefore, secured debt has a priority claim over unsecured debt and subordinated debt.

A is incorrect because unsecured debt is paid after secured debt in the event of default.

B is incorrect because subordinated debt is a form of unsecured debt and it is paid after secured debt in the event of default.

130. Correct answer: B.

B is correct. It is an example of a foreign bond, that is, a bond issued by a foreign company in the domestic market of the country in whose currency the bond is denominated.

A is incorrect because this is an example of a euro-denominated Eurobond.

C is incorrect because this is an example of a Eurodollar bond.

131. Correct answer: B.

B is correct. Bond B's embedded put option benefits the investor, and the yield spread will therefore be less than the yield spread of Bond C, which does not contain this option or benefit.

A is incorrect because Bond A's embedded call option benefits the issuer, not the investor, therefore investors will demand a higher yield spread than on Bond C in compensation.

C is incorrect because Bond B should have a smaller yield spread.

132. Correct answer: B.

B is correct. The bid–offer spread reflects the prices at which secondary market dealers will buy from a customer (bid) and sell to a customer (offer). It is an indicator of liquidity because a tighter bid–offer spread represents a more liquid market than a market with a wider bid–offer spread.

A is incorrect because the bid-to-cover ratio represents the activity in a primary bond market auction.

C is incorrect because the settlement period represents the market's conventions for settlement for different types of bonds (e.g., government bonds or corporate bonds.)

133. Correct answer: C.

C is correct. The right to call the issue is beneficial to the issuer when interest rates fall.

A is incorrect because the conversion provision grants the bondholder the right to convert the bond for a specified number of shares of common stock. Such a feature allows the bondholder to take advantage of favorable movements in the price of the issuer's common stock.

B is incorrect because the right to put the issue is an option granted to the bondholder to sell the bond back to the issuer at a predetermined price on specified dates before maturity.

134. Correct answer: C.

C is correct. A reverse repo (repurchase agreement) is collateralized cash lending by purchasing an underlying security now and selling it back in the future.

A is incorrect because it is the contract known for Louly Corporate as a collateralized borrowing, i.e., repo.

B is incorrect because collateralized short-term borrowing involves selling the security and subsequently repurchasing the collateral posted.

135. Correct answer: C.

C is correct. The bond is priced below its par value but will be worth exactly par value at maturity. Over time, assuming a stable discount rate, the value of the bond must rise so that it is equal to par at maturity. That is, the price is "pulled to par."

A is incorrect because the bond's value must rise over time to be equal to its par value.

B is incorrect because the bond's value must rise over time to be equal to its par value.

136. Correct answer: B.

B is correct. Matrix pricing is most suited to pricing inactively traded bonds and newly underwritten bonds. A credit analyst is least likely to use matrix pricing to price an actively traded bond.

A is incorrect because matrix pricing is most suited to pricing newly underwritten bonds.

C is incorrect because matrix pricing is most suited to pricing inactively traded bonds.

137. Correct answer: A.

A is correct. The forward and spot curves are interconnected to each other. The spot curve can be calculated from the forward curve, and the forward curve can be calculated from the spot curve. Either curve can be used to value fixed-rate bonds.

B is incorrect because the spot curve can be calculated from the forward curve, and the forward curve can be calculated from the spot curve.

C is incorrect because the spot curve can be calculated from the forward curve, and the forward curve can be calculated from the spot curve.

138. Correct answer: B.

B is correct. Building blocks of the yield curve are spread (risk premium) and a benchmark (risk-free rate of return). Expected inflation rate and expected real rate are components of the risk-free rate of return (i.e., the benchmark).

A is incorrect because taxation is part of the yield spread providing the investor with compensation for the tax impact of holding a specific bond.

C is incorrect because credit risk is part of the yield spread providing the investor with compensation for the credit risks of holding a specific bond.

139. Correct answer: C.

C is correct. When a company is reorganized, the strict absolute priority has not always been upheld by the courts.

A is incorrect because in liquidations, the absolute priority rule generally holds.

B is incorrect because in the case of a SPV securitization, the courts (in most jurisdictions) have no discretion to change absolute priority because the bankruptcy of a company does not affect the SPV. The SPV is considered bankruptcy remote.

140. Correct answer: B.

B is correct. For residential mortgage-backed securities (RMBS) issued by a GSE (government-sponsored enterprise), such as Fannie Mae and Freddie Mac, credit risk is reduced

by the guarantee of the GSE itself.

A is incorrect because RMBS issued by a federally related institution, such as Ginnie Mae, are guaranteed by the full faith and credit of the government with respect to timely payment of principal and interest.

C is incorrect because RMBS issued by private entities are not guaranteed by a federal agency or GSE and use credit enhancements to reduce risk.

141. Correct answer: A.

A is correct. The benefit of the return on collateral in excess of what is paid out to the bond classes accrues to the equity holders and to the CDO manager.

B is incorrect because when the senior bond class experiences early principal repayment the CDO manager isn't meeting pre-specified tests requiring the prepayment of low cost senior debt, deleveraging the CDO and making it harder for the subordinated tranche to earn a competitive return.

C is incorrect because if debt funding costs are higher than the CDO return, no return will accrue to the subordinated tranche.

142. Correct answer: A.

A is correct. Yield to maturity is based on the assumption that a bond is held to maturity, does not default, and has its coupon payments reinvested at the yield to maturity. The bond selling at a premium has the highest coupon rate and is expected to earn the most reinvestment income from reinvesting those coupon payments at the yield to maturity. If the reinvestment rate falls, this bond will suffer the greatest loss.

B is incorrect because the bond selling at par has a lower coupon rate than the bond selling at a premium.

C is incorrect because the bond selling at a discount has a lower coupon rate than the bond selling at a premium.

143. Correct answer: B.

B is correct. When interest rates are rising, the put option becomes more valuable to the investor.

The ability to sell the bond at par value limits the price depreciation as rates rise. So, the presence of an embedded put option reduces the sensitivity of the bond price to changes in interest rates, resulting in a lower effective duration.

A is incorrect because in a rising interest rate environment the effective duration of a puttable bond will be lower, not higher, than the effective duration of a comparable non-puttable bond.

C is incorrect because in a rising interest rate environment the effective duration of a puttable bond will be lower than the effective duration of a comparable non-puttable bond.

144. Correct answer: C.

C is correct. The estimated percentage decline in the price of the bond given a 100 basis point increase in yield is calculated as:

$$\begin{aligned}\% \Delta PV^{Full} &\approx (-\text{AnnModDur} \times \Delta \text{Yield}) + \left[\frac{1}{2} \times \text{AnnConvexity} \times (\Delta \text{Yield})^2 \right] \\ &\approx (-15.213 \times 0.01) + \left[\frac{1}{2} \times 350.32 \times (0.01)^2 \right] \approx -0.13461 \text{ or } -13.46\%\end{aligned}$$

Given a 100 basis point increase in the bond's yield to maturity, the bond price would fall by approximately 13.46%.

A is incorrect because 0.15% would be the percentage decline in the price of the bond given a 1 basis point increase in the yield to maturity, calculated as follows:

$$\% \Delta PV^{Full} \approx (-15.213 \times 0.0001) + \left[\frac{1}{2} \times 350.32 \times (0.0001)^2 \right] \approx -0.00152 \text{ or } -0.15\%$$

B is incorrect because 8.21% would be the percentage decline in the price of the bond if the annual convexity statistic, AnnConvexity, were multiplied by 2 instead of 0.5, as follows:

$$\% \Delta PV^{Full} \approx (-15.213 \times 0.01) + [2 \times 350.32 \times (0.01)^2] \approx -0.08207 \text{ or } 8.21\%$$

145. Correct answer: A.

A is correct. For an option-free, fixed-rate bond, the "inflation duration," the "real rate duration," and the "liquidity duration" are all the same number.

B is incorrect because the real rate duration is equivalent to both the bond's "credit duration" and its "inflation duration."

C is incorrect because the real rate duration is equivalent to both the bond's "inflation duration" and its "liquidity duration."

146. Correct answer: B.

B is correct. As an issuer's default risk rises, investors will focus more on what the recovery rate might be in the event of default.

A is incorrect. Most investors in investment-grade debt focus more on spread risk than default risk (spread risk being defined as the effect on prices and returns from changes in spreads).

C is incorrect. Because default probability is low for most high-quality debt issuers, bond investors tend to focus primarily on assessing this probability and devote less effort to assessing the potential loss severity arising from default. However, as an issuer's default risk rises, investors will focus more on what the recovery rate might be in the event of default.

147. Correct answer: B.

B is correct. In the case of speculative grade bonds, two bonds with the same credit ratings will tend to have the same probabilities of default. They may still trade at very different valuations because for such bonds the market typically begins focusing on the severity of loss in the event of default, which can be quite different for similarly rated bonds.

A is incorrect because for speculative grade bonds with similar credit ratings the valuations may be quite different if the severity of loss associated with the two bonds is very different from each other.

C is incorrect because if there is a perceived difference in credit quality there is a difference in valuation.

148. Correct answer: A.

A is correct. The company's interest coverage ratio can be computed as EBITDA/Interest expense.

That is:

	20X1	20X2
EBITDA	125.0	170.0
Interest expense	30.0	35.0
EBITDA/Interest expense	4.17	4.86
EBITDA = Operating profit + Depreciation and amortization		

The company's EBITDA interest coverage ratio has improved over this period. If EBIT is used to

calculate the coverage ratios, the same conclusion is reached: for 20X1 the ratio is 3.33, and for 20X2 it is 3.86.

B is incorrect because the EBITDA interest coverage ratio has improved over this period.

C is incorrect because the EBITDA interest coverage ratio has improved over this period.

Questions 149~159 Relate to Derivatives**149. Correct answer: A.**

A is correct. Although an exchange-traded fund derives its value from the underlying assets it holds, it does not transform the performance of those assets and so is not a derivative.

B is incorrect. A contract to sell Alphabet Inc.'s shares transforms the performance of the underlying shares of Alphabet Inc and is an example of an option derivative.

C is incorrect. A contract to buy Australian dollars transforms the performance of the underlying currency and is an example of a currency derivative.

150. Correct answer: B.

B is correct. If the underlying asset's value is less than the option's exercise price, the call option is not worth exercising and is said to be out of the money.

A is incorrect. For an at-the-money call option, the value of the underlying asset is equal to the option's exercise price, and the option buyer would be indifferent between exercising or not exercising the option.

C is incorrect. For an in-the-money call option, the value of the underlying asset is greater than the option's exercise price, and the option is worth exercising.

151. Correct answer: C.

C is correct. In an efficient market, the derivatives market is more likely to reflect fundamental value, even if only for a short period, before the underlying spot market because derivatives contracts require less capital, have lower transaction costs, and are easier to sell short.

A is incorrect. In an efficient market, the derivatives market (not the underlying spot market) is more likely to reflect fundamental value because derivatives contracts require less capital, have lower transaction costs, and are easier to sell short.

B is incorrect. In an efficient market, the derivatives market is more likely to reflect fundamental value before the underlying spot market because derivatives contracts require less capital, have lower transaction costs, and are easier to sell short.

152. Correct answer: B.

B is correct. For riskless arbitrage to exist, the underlying security that can be arbitrated may be either a financial or a non-financial security.

A is incorrect. For riskless arbitrage to exist, the underlying security must be able to be short sold.

C is incorrect. For riskless arbitrage to exist, the underlying security must be relatively liquid so it is easy to buy and sell at a low cost.

153. Correct answer: A.

A is correct. The price of a forward contract remains constant throughout its life. It is set as part of the contract specifications. The value varies with changes in the price of the underlying.

B is incorrect. The price is constant, but value varies with changes in the price of the underlying.

C is incorrect. The price is constant, but value varies with changes in the price of the underlying.

154. Correct answer: B.

B is correct. Given the formula for the value of a forward contract:

$$V_t(T) = S_t - F_0(T)(1 + r)^{-(T-t)}$$

it follows that the value of the contract goes up as the price of the underlying goes up.

A is incorrect. As the time to maturity goes down, the value of the contract goes down.

C is incorrect. As interest rates go down, the value of the contract goes down.

155. Correct answer: B.

B is correct. Forward rate agreements are used to hedge interest rate exposure present in the money market.

A is incorrect. Forward rate agreements are used to hedge interest rate exposure and not foreign exchange exposure.

C is incorrect. Forward rate agreements are used to hedge interest rate exposure and not equity exposure.

156. Correct answer: C.

C is correct. Due to differences in the cost of carry, implied forward contracts will have different prices. The differences in the cost of carry stem from the timing differences of the payments.

A is incorrect. Differences in price are due to differences in the cost of carry. The price of the underlying at expiration is irrelevant for the price. It determines the value of the swap.

B is incorrect. The prices will be different due to differences in the cost of carry.

157. Correct answer: B.

B is correct. Swaps have both a price and a value. Price in the context of a swap is a reference to the fixed-rate payment on the swap, which is constant over time. The value of a swap is zero at initiation but can change over the life of the swap as market interest rates change.

A is incorrect. Price and value are not normally equal at expiration.

C is incorrect. The price in the context of a swap is a reference to the fixed-rate payment on the swap, which is constant over time and does not change in reaction to interest rate changes.

158. Correct answer: B.

B is correct. The put–call parity relationship states that

$$S_0 + p_0 = c_0 + \frac{x}{(1+r)^T}$$

That is,

Long asset + Long put = Long call + Long risk-free bond.

Rearranging terms gives

Long call = Long put + Long asset + Short risk-free bond

A and C are incorrect. Long call = Long put + Long asset + Short risk-free bond.

159. Correct answer: A.

A is correct. American call prices can differ from European call prices only if the underlying stock is dividend paying. In the absence of such cash payments, European and American call options have the same value.

B is incorrect. In the absence of cash payments such as dividends, the value of European and American call options is identical.

C is incorrect. In the absence of cash payments such as dividends, the value of European and American call options is identical.

Questions 160~169 Relate to Alternative Investments**160. Correct answer: C.**

C is correct. Cash and other short-term liquid investments would not generally be considered alternative investments. Alternative investments fall outside of the definition of long-only publicly traded investments in stocks, bonds, and cash (often referred to as traditional investments). In other words, these investments are alternatives to long-only positions in stocks, bonds, and cash.

A is incorrect because the category “collectibles” would include tangible assets such as fine wine, art, antique furniture, and automobiles.

B is incorrect because the category “infrastructure” would include capital intensive, long-lived, real assets, such as roads, dams, and schools.

161. Correct answer: C.

C is correct. Regardless of performance, the management fee is always paid to the fund manager.

B is incorrect because the gross return can be at any level and the manager is still paid the management fee.

A is incorrect because the management fee is paid regardless of the value of the assets in the fund.

162. Correct answer: B.

B is correct. High-water marks help clients avoid paying twice for the same performance. When a hedge fund’s value drops, the manager will not receive an incentive fee until the value of the fund returns to its previous level.

A is incorrect because high-water marks are not linked to prime brokerage fees.

C is incorrect because management fees are paid irrespective of returns.

163. Correct answer: A.

A is correct. A trade sale is the sale of a portfolio company to a strategic buyer, such as a company that is active in the same industry.

B is incorrect. A secondary sale is a sale to another private equity firm.

C is incorrect. An initial public offering involves the sale of shares to public investors.

164. Correct answer: A.

A is correct. "Co-investors have reduced control over the investment selection process (compared with direct investing) and may be subject to adverse selection bias, where the fund manager makes less attractive investment opportunities available to the co-investor while allocating its own capital to more appealing deals." Furthermore, in comparison to other alternative investment approaches, co-investing is most likely to be subject to adverse selection bias.

B is incorrect because in comparison to other alternative investment approaches, co-investing is most likely to be subject to adverse selection bias.

C is incorrect because in comparison to other alternative investment approaches, co-investing is most likely to be subject to adverse selection bias.

165. Correct answer: C.

C is correct. In backwardation, futures prices are lower than spot prices, that is, the commodity forward curve is downward sloping. This scenario occurs when the convenience yield is high.

Futures price \approx Spot price $(1 + r) + \text{Storage costs} - \text{Convenience yield}$.

A is incorrect. Futures price \approx Spot price $(1 + r) + \text{Storage costs} - \text{Convenience yield}$. Thus, high interest rates contribute to an upward sloping commodity forward curve.

B is incorrect. Futures price \approx Spot price $(1 + r) + \text{Storage costs} - \text{Convenience yield}$. Thus, high storage costs contribute to an upward sloping commodity forward curve.

166. Correct answer: A.

A is correct. Mortgage-backed securities are pools of loans that are securitized and offered to the financial markets providing indirect debt investment opportunities in residential property.

C is incorrect because originators (generally financial institutions) of residential mortgages are making a direct debt investment in the home.

B is incorrect because commercial property is considered an appropriate direct investment—equity (i.e., ownership) and debt (i.e. lender)—for institutional or high-net-worth investors with long time horizons and limited liquidity needs.

167. Correct answer: B.

B is correct. A master limited partnership (MLP) is publicly traded, whereas a private equity fund is not. Therefore the MLP will have market pricing information to help with valuation. A brownfield investment is an existing asset that likely has operational and financial history to aid in valuation; a greenfield investment is in new construction.

A is incorrect because greenfield investments have no operational or financial history to aid in valuation, whereas brownfield investments do.

C is incorrect because master limited partnerships are publicly traded, with market pricing data available for valuation purposes, whereas private equity funds are not.

168. Correct answer: A.

A is correct. A "quantitative measure of performance is return relative to downside volatility—the Sortino ratio." "[T]he denominator for the Sortino ratio is downside deviation of returns—a semi-deviation measure of volatility only during periods of loss for an alternative investment."

B is incorrect because "**capital loss ratio** [is] defined as the percentage of capital in deals that have been realized below cost, net of any recovered proceeds, divided by total invested capital."

C is incorrect because "[a] maximum drawdown (MDD) is the maximum observed loss from a peak to a trough of a portfolio, before a new peak is attained."

169. Correct answer: A.

A is correct. The net-of-fees return to the investor at year-end is closest to 13.71%.

Portfolio gain = Year-end value – Beginning value = \$11.8 million – \$10 million = \$1.8 million

Hurdle amount = Beginning value × Hurdle % = \$10 million × 6% = \$600,000

Management fee = Year-end value × Management fee % = \$11.8 million × 2% = \$236,000

Incentive fee = (Portfolio gain – Hurdle amount – Management fee) × Incentive fee %
= (\$1.8 million – \$600,000 – \$236,000) × 20% = \$192,800

Total fees = Management fee + Incentive fee = \$236,000 + \$192,800 = \$428,800

Net-of-fees return = (Portfolio gain – Total fees)/Beginning value
= (\$1.8 million – \$428,800)/\$10 million = 13.71%

B is incorrect because 13.24% results from calculating the incentive fee independently from the

management fee as opposed to net of the management fee:

$$\text{Portfolio gain} = \text{Year-end value} - \text{Beginning value} = \$11.8 \text{ million} - \$10 \text{ million} = \$1.8 \text{ million}$$

$$\text{Hurdle amount} = \text{Beginning value} \times \text{Hurdle \%} = \$10 \text{ million} \times 6\% = \$600,000$$

$$\text{Management fee} = \text{Year-end value} \times \text{Management fee \%} = \$11.8 \text{ million} \times 2\% = \$236,000$$

$$\begin{aligned} \text{Incentive fee} &= (\text{Portfolio gain} - \text{Hurdle amount}) \times \text{Incentive fee \%} \\ &= (\$1.8 \text{ million} - \$600,000) \times 20\% = \$240,000 \end{aligned}$$

$$\text{Total fees} = \text{Management fee} + \text{Incentive fee} = \$236,000 + \$240,000 = \$476,000$$

$$\begin{aligned} \text{Net-of-fees return} &= (\text{Portfolio gain} - \text{Total fees}) / \text{Beginning value} \\ &= (\$1.8 \text{ million} - \$476,000) / \$10 \text{ million} = 13.24\% \end{aligned}$$

C is incorrect because 13.93% results from calculating the hurdle amount based on the end-of-period value instead of the beginning-of-period value:

$$\text{Portfolio gain} = \text{Year-end value} - \text{Beginning value} = \$11.8 \text{ million} - \$10 \text{ million} = \$1.8 \text{ million}$$

$$\text{Hurdle amount} = \text{Ending value} \times \text{Hurdle \%} = \$11.8 \text{ million} \times 6\% = \$708,000$$

$$\text{Management fee} = \text{Year-end value} \times \text{Management fee \%} = \$11.8 \text{ million} \times 2\% = \$236,000$$

$$\begin{aligned} \text{Incentive fee} &= (\text{Portfolio gain} - \text{Hurdle amount} - \text{Management fee}) \times \text{Incentive fee \%} \\ &= (\$1.8 \text{ million} - \$708,000 - \$236,000) \times 20\% = \$171,200 \end{aligned}$$

$$\text{Total fees} = \text{Management fee} + \text{Incentive fee} = \$236,000 + \$171,200 = \$407,200$$

$$\begin{aligned} \text{Net-of-fees return} &= (\text{Portfolio gain} - \text{Total fees}) / \text{Beginning value} \\ &= (\$1.8 \text{ million} - \$407,200) / \$10 \text{ million} = \mathbf{13.93\%} \end{aligned}$$

Questions 170~180 Relate to Portfolio Management**170. Correct answer: A.**

A is correct. A no-load open-end fund accepts new investment money and issues additional shares at a value equal to the net asset value of the fund at the time of investment. This structure makes it easy to grow in size but creates pressure on the portfolio manager to manage the cash inflows and outflows. Redemptions may create the need to liquidate assets that the portfolio manager might not want to sell at the time or to hold cash to meet redemptions. As a no-load fund, it charges no fee for investing in the fund or for redemption.

B is incorrect because a load closed-end fund disallows new investment money into the fund and in addition to the annual fee, a percentage fee is charged to invest in the fund and/or for redemption from the fund. Therefore, needs for liquidity for the portfolio managers are low.

C is incorrect because a no-load closed-end fund disallows new investment money into the fund and charges no fee for investing in the fund or for redemption. Therefore, there are no particular needs for liquidity for the portfolio managers.

171. Correct answer: C.

C is correct. Time-weighted rate of return reflects the compound rate of growth of one unit of currency invested over a stated measurement period, and it removes the effects of timing and amount of withdrawals and additions to the portfolio.

A is incorrect. Time-weighted rate of return can be the same, higher, or lower than money-weighted rate of return.

B is incorrect because this is in fact the explanation for money-weighted return.

172. Correct answer: B.

B is correct. A correlation of -0.2 because the lower the correlation, the lower the portfolio risk (standard deviation), all else being equal.

A is incorrect because a 50% correlation portfolio will reduce the risks but not as much as the negative correlated portfolio.

C is incorrect because a 0% correlation portfolio will reduce the risks but not as much as the negative correlated portfolio.

173. Correct answer: A.

A is correct. A portfolio lying to the right of the market portfolio on the CML is formed by borrowing funds at the risk-free rate and investing all available funds in the market portfolio.

B is incorrect because this portfolio will lie to the left of the market portfolio and on the intercept of the capital market line.

C is incorrect because this portfolio will lie to the left (not right) of the market portfolio and in between the risk-free asset and the market portfolio.

174. Correct answer: B.

B is correct.

$$\beta = \frac{\rho_{i,m} \sigma_i \sigma_m}{\sigma_m^2} = \frac{0.45 \times 0.1235 \times 0.0825}{0.0825^2} = 0.67$$

A is incorrect.

$$\frac{0.45 \times 0.0825^2}{0.1235 \times 0.0825} = 0.30$$

C is incorrect.

$$\frac{0.1235}{0.0825} = 1.4969$$

175. Correct answer: A.

A is correct. Information related to strategic asset allocation and portfolio rebalancing policy would be placed in the appendices of an investment policy statement.

B is incorrect because this section contains information on the client's objectives when investing.

C is incorrect because this section contains information on the steps to take to keep the investment policy statement current and the procedures to follow to respond to various contingencies.

176. Correct answer: C.

C is correct because "[c]onservatism bias is a belief perseverance bias in which people maintain their prior views or forecasts by inadequately incorporating new, conflicting information." In order

to overcome such a bias, "[w]hen new information is presented, the FMP [financial market participant] should ask such questions ... as, 'How does this information change my forecast?' or 'What effect does this information have on my forecast?'"

A is incorrect because "[h]indsight bias refers to believing past events as having been predictable and reasonable to expect." "Once understood, hindsight bias should be recognizable. FMPs [financial market participants] should ask such questions as, 'Am I re-writing history or being honest with myself about the mistakes I made?'"

B is incorrect because "[s]elf-control bias is a bias in which people fail to act in pursuit of their long-term, overarching goals in favor of short-term satisfaction." In order to overcome such a bias, people "should ensure that a proper investment plan is in place and should have a personal budget."

177. Correct answer: C.

C is correct. The risk tolerance of an organization should reflect both an "inside" view and an "outside" view. The inside view asks what level of loss will leave the organization unable to meet critical objectives. The outside view asks what sources of uncertainty or risk the organization faces.

A is incorrect because both an "inside" and "outside" view must be reflected.

B is incorrect because both an "inside" and "outside" view must be reflected.

178. Correct answer: C.

C is correct. Standard deviation is a measure of dispersion in a probability distribution and is used to describe the range of outcomes (minimum and maximum, centered on the expected outcome) that can occur with a particular probability. In contrast, duration measures the sensitivity of a security or portfolio to a change in market interest rates, and vega measures the sensitivity of a security (either a derivative or a security with derivative-like characteristics) to a change in the price volatility of the underlying asset.

A is incorrect because vega measures the sensitivity of a security (either a derivative or a security with derivative-like characteristics) to a change in the price volatility of the underlying asset.

B is incorrect because duration measures the sensitivity of a security or portfolio to a change in

market interest rates.

179. Correct answer: C.

C is correct. The support level is defined to be a low price range in which buying activity is sufficient to stop the decline in price.

A is incorrect. The question does not ask about the *breach* of a support level.

B is incorrect. Resistance is the opposite of support (price range in which selling is sufficient to stop the rise in price).

180. Correct answer: A.

A is correct. An advantage of DLT systems is that they can help uncover fraudulent activity and reduce compliance costs.

B is incorrect. DLT systems require substantial storage resources as they increase in scale.

C is incorrect. It is a disadvantage of a DLT system. Immutability of transactions means accidental or “canceled” trades can be undone only by submitting an equal and offsetting trade.