Questions 1~25 Relate to Ethical and Professional Standards

1. Correct answer: B.

B is correct. Most societies acknowledge the ethical principles of honesty, fairness or justice, diligence, and respect for the rights of others. Duplicity or deception would be in violation of most ethical principles.

A is incorrect. Justice is often considered an ethical principle in most societies.

C is incorrect. Diligence is often considered an ethical principle in most societies.

2. Correct answer: C.

C is correct. If the client could prove the firm marketed its code of ethics (i.e., putting the interests of the client first) as a reason to hire the firm and the adviser violated the code, the court may rule in the client's favor.

A is incorrect because an adviser can still act in a fiduciary manner while benefiting more than the client. This is particularly true when investment returns are unexpectedly negative and the client pays fees to the adviser.

B is incorrect because unethical behavior is not necessarily illegal. However, if the client could prove the firm marketed their code of ethics (i.e., putting the interests of the client first) as a reason to hire the firm and the adviser violated the code, the court may rule in the client's favor.

3. Correct answer: B.

B is correct because Standard I–Professionalism requires members and candidates to comply with the more strict law, rule, or regulation in the event of conflicts of any applicable laws, rules, and regulations (including the CFA Institute Code of Ethics and Standards of Professional Conduct). Country B does not require a financial advisor to uphold a fiduciary duty (as is required by Country A and C), i.e., put the client's interest before their own, therefore the CFA Code of Ethics and Standards of Professional Conduct (Duty to Clients) would be applicable as it is the stricter of the two.

A is incorrect because Country A requires the upholding of fiduciary duties that creates a higher standard than that of the Code and Standards.

C is incorrect because Country C requires two licenses and the upholding of fiduciary duties that creates a higher standard than that of the Code and Standards. Thus Country C's laws are the governing law.

4. Correct answer: A.

A is correct. Making claims that the CFA designation was proof of superior analytical skills is a violation of Standard VII(B)–References to CFA Institute, the CFA Designation, and the CFA Program. 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 implication of membership in CFA Institute, holding the CFA designation, or candidacy in the CFA Program.

B is incorrect. Making claims that the CFA designation was proof of superior analytical skills is not a violation of Standard V–Investment Analysis, Recommendations, and Actions.

C is incorrect. Making claims that the CFA designation was proof of superior analytical skills is not a violation of Standard IV–Duties to Employers.

5. Correct answer: A.

A is correct because Standard I(A)–Knowledge of the Law requires Members and Candidates to comply with the more strict law, rules, or regulations and follow the highest requirement, which in this case would be the CFA Institute Standards of Professional Conduct. Standard II(A)–Material Nonpublic Information would also apply as Members and Candidates who possess material nonpublic information that could affect the value of an investment must not act or cause others to act on the information. Disclosure that she meets local mandatory legal requirements, not the more strict law, rule, or regulation of the Code and Standards, would not alleviate the member from following the Code and Standards.

B is incorrect because Standard I(A)–Knowledge of the Law requires Members and Candidates to not trade on material nonpublic information. Standard II(A)–Material Nonpublic Information would also apply as Members and Candidates who possess material nonpublic information that could affect the value of an investment must not act or cause others to act on the information.

C is incorrect because Standard I(A)–Knowledge of the Law requires Members and Candidates to comply with the more strict law, rule, or regulation, which in this case is the Code and Standards and not local requirements. Disclosure of the manager's political advocacy is not required because it does not entail a conflict of interest and doing so would not alleviate the member from following the Code and Standards.

6. Correct answer: A.

A is correct because under Standard I(B) members and candidates must protect their independence and objectivity. Agreeing to provide objective research coverage of a company does not constitute a violation of this standard provided the analyst writing the report is free to come up with their own independent conclusion. Smith can agree to provide research coverage but cannot commit Granite's research department to providing a favorable recommendation.

B is incorrect because providing research coverage in this situation does not constitute a violation of the Code and Standards as long as the independence of this research is not compromised.

C is incorrect because providing research coverage in this situation does not constitute a violation of the Code and Standards as long as the independence of this research is not compromised.

7. Correct answer: A.

A is correct. Rodrigo has likely violated Standard I(D)–Misconduct by behaving in an unprofessional manner that reflects adversely on his professional integrity by reporting Torres to the regulator when there is no apparent evidence Torres is using material nonpublic information. Torres is a well-respected analyst known for his in-depth, thorough analysis using a mosaic process. It appears Rodrigo only reported Torres to harm his reputation in order to recapture the market share he has lost over the last two years. There is no evidence Torres manipulated the market through his research. The research is used for the benefit of the Pegasus clients. Although the public may consider Torres' reports to be material because of the fact that their release can move the market, it does not mean the report must be made available to the public prior to the release of the report to Pegasus clients.

B is incorrect because while the public may consider Torres reports to be material due to the fact that their release can move the market, it does not mean the report must be made available to the public prior to the release of the report to Pegasus clients.

C is incorrect because there is no evidence Torres manipulated the market through his research.

The research is used for the benefit of the Pegasus clients.

8. Correct answer: B.

B is correct because a violation of Standard II(A)–Material Nonpublic Information is likely to occur when using information that is selectively disclosed by corporations to a small group of investors, analysts, or other market participants. Earnings estimates given in a one-on-one meeting would likely be considered material and nonpublic information. Information made available to analysts remains nonpublic until it is made available to investors in general. Under the mosaic theory it is acceptable to use information from industry contacts as long as the analyst uses appropriate methods to arrive at her conclusions. Additionally, it is acceptable to use nonmaterial nonpublic information in her analysis, and this use is not a violation of Standard II(A)–Material Nonpublic Information.

A is incorrect because under the mosaic theory it is acceptable to use information from industry contacts as long as the analyst uses appropriate methods to arrive at her conclusions.

C is incorrect because it is acceptable to use nonmaterial nonpublic information in her analysis, and this use is not a violation of Standard II(A)–Material Nonpublic Information.

9. Correct answer: C.

C is correct, as Cardinal's actions related to the public relations campaign and class action lawsuits are specifically intended to manipulate share prices lower and to advantage the manager. Cardinal has made deliberate attempts to create artificial price volatility designed to have a material impact on the price of an issuer's stock, in violation of Standard II(B)–Market Manipulation.

A is incorrect because selling stock short is a management strategy and does not necessarily violate any aspect of the Code and Standards.

B is incorrect, as it appears a reasonable and diligent effort has been made as required by Standard V(A)–Diligence and Reasonable Basis to determine the investment action is sound and suitable for his clients. Information gathering is an integral part of investment analysis and the methods described do not necessarily violate any aspect of the CFA Code and Standards.

10. Correct answer: C.

C is correct because Bravoria violated Standard III(A)–Loyalty, Prudence, and Care as he had not updated his client's profile in more than two years and thus should not have made further investments, particularly in high-risk investments, until such time as he updated the client's risk and return objectives, financial constraints, and financial position. Bravoria provided his client with investment statements more frequently than that which is required, i.e., quarterly, so was not in violation of regular account information.

A is incorrect because Bravoria violated Standard III(A)–Loyalty, Prudence, and Care.

B is incorrect because Bravoria provided his client with investment statements more frequently than required, i.e., quarterly.

11. Correct answer: B.

B is correct because the client is the trust/trustees, not the beneficiary. Mawar followed Standard III(C) –Suitability by managing the trust assets in a way that would likely result in a stable source of income while keeping the risk profile low, thereby complying with the investment objectives of the trust.

A is incorrect because Mawar did not violate any Standard as she managed trust assets considering the suitability for the client, not the beneficiary.

C is incorrect because the client is the trust/trustees, not the beneficiary. Therefore the time horizon of the investment is not relevant.

12. Correct answer: C.

C is correct because in order to meet their obligations under Standard III(D), members should present the performance of the weighted composite of similar portfolios rather than using a single representative or all accounts, so this is the best selection of the options provided.

A is incorrect as either gross or net of fee performance may be disclosed.

B is incorrect since the use of simulated results is permitted as long as it is disclosed.

13. Correct answer: C.

C is correct as Standard IV(A) calls for employees to be loyal to their employer by not causing harm. If Botha released a contradictory research recommendation report to clients, it could possibly cause confusion amongst clients and embarrassment to the firm.

A is incorrect as Botha does not need to disassociate from the research report even though she does not agree with the conclusion made as she acknowledges the process was sound.

B is incorrect. While Botha does not need to disassociate from the research report, she could still ask for her name to be removed from the report without violating any Standard.

14. Correct answer: C.

C is correct because members should disclose all potential conflicts of interest, the substantial time involved in managing family accounts, and when engaging in independent practice for compensation should not render services until receiving written consent from all parties [Standard IV(B), Standard VI(A)].

A is incorrect because both standards have been violated.

B is incorrect because both standards have been violated.

15. Correct answer: A.

A is correct because under standard IV(C) a member should exercise reasonable supervision by establishing and implementing compliance procedures prior to the possibility of any violation occurring, which has not been done in this case.

B is a correct action but does not address the standard violation. These actions are intended to restrict activities after the violation and do not relate to investigating why or how the violation occurred, which would be necessary to establish and implement adequate compliance procedures.

C is a correct action but the steps were taken after the fact and procedures should have been in place previously.

16. Correct answer: A.

A is correct because members are in compliance with Standard V (A)–Diligence and Reasonable Basis if they rely on the research of another party who exercised diligence and thoroughness. Because Bishop's opinion did not agree with the final report, disassociating her from the report is one way to handle this difference between the analysts.

B is incorrect because Hall did not make any misrepresentation.

C is incorrect because Hall is allowed to rely on a third party who exercised diligence and thoroughness.

17. Correct answer: B.

B is correct because while pro forma analysis may be standard industry practice, it is not required by the Standards. Earnings estimates are opinions and must be clearly identified as such.

A is incorrect because facts should be separated from opinion in investment analysis.

C is incorrect because known limitations should be identified.

18. Correct answer: C.

C is correct because the manager's ownership stake is a potential conflict of interest, which should be disclosed as required by Standard VI(A)–Disclosure of Conflicts, but there is no requirement to sell the shares. As long as the analyst has completed a well-informed investment recommendation consistent with Standard (V)–Diligence and Reasonable Basis and disclosed her ownership position, she could include the buy recommendation in her report.

A is incorrect because the manager's ownership stake is a potential conflict of interest, which should be disclosed as required by Standard VI(A)–Disclosure of Conflicts, but there is no requirement to sell the shares.

B is incorrect because as long as the analyst has completed a well-informed investment recommendation consistent with Standard (V)–Diligence and Reasonable Basis and disclosed her ownership position, she could include the buy recommendation in her report.

19. Correct answer: B.

B is correct because Standard VI(B)–requires client transactions to be given precedence over transactions made on behalf of the member's or candidate's firm or personal transactions. Because the advisor trades alongside his clients and allocates trades on a rotating basis, there are times when the advisor's trades will receive priority over his clients in violation of the Code and Standards. A member or candidate having the same investment positions or being co-invested with clients does not always create a conflict. Some clients in certain investment situations require members or candidates to have aligned interests. Personal investment positions or transactions of members or candidates or their firms should never, however, adversely affect client investments.

A is incorrect because the trade allocation procedure does not meet the requirements of Standard VI(B), which requires client transactions to be given precedence over transactions made on behalf of the member's or candidate's firm or personal transactions.

C is incorrect because even though trade allocation procedures should be disclosed to clients, in this case the procedure fails to meet the requirement of the Code and Standards, so disclosure is not sufficient and the procedures should be revised.

20. Correct answer: C.

C is correct because Arun shouldn't accept the introductory fee because he didn't disclose his arrangement with Ramport prior to Ramport's appointment by the client. By refusing the fee, he effectively voids the agreement with Ramport thus removing the conflict of interest.

A is incorrect because Arun has violated Standard VI(C)–Referral Fees because he did not disclose the fee paid by Ramport.

B is incorrect because by disclosing to the client that he accepted an introductory fee as part of his agreement with Ramport he made before their appointment would not meet the requirement of Standard VI(C) to disclose **prior** to the client making the appointment of the firm making the introductory fee.

21. Correct answer: A.

A is correct because by completing a question on his examination after time was called, Chowdary violated Standard VII(A)–Conduct as Members and Candidates in the CFA Program. By continuing to write, Chowdary took advantage of other candidates, and his conduct compromised the validity of his exam performance.

B is incorrect because Chowdary violated Standard VII(A) by working on his examination after time was called.

C is incorrect because Chowdary violated Standard VII(A) by working on his examination after time was called.

22. Correct answer: B.

B is correct because Standard VII(B)–Reference to CFA Institute, the CFA Designation, and the CFA Program forbids candidates to imply that they have a partial designation or cite an expected completion date of any level of the CFA Program. Final award of the Charter is subject to meeting the CFA Program requirements and approval by the CFA Institute Board of Governors. Garcia should state, "passed Level III CFA exam" or "passed all three levels of the CFA exams". By stating that he "passed the CFA Course" it could be taken to mean he obtained his Charter, which is incorrect.

A is incorrect because Garcia violates Standard VII(B)–by implying he has obtained the CFA Charter, when he has not.

C is incorrect because describing the process is not required by the Standards.

23. Correct answer: B.

B is correct. Firms that claim compliance with the GIPS standards must not make statements referring to the performance of a current client or pooled fund investor as being "calculated in accordance with the GIPS standards," except when reporting the performance of a segregated account to a current client or a pooled fund to a current investor.

A is incorrect because GIPS-compliant firms must not make statements referring to the performance of a current client or pooled fund investor as being "calculated in accordance with the GIPS standards," except for when a GIPS-compliant firm reports the performance of a segregated account to current clients or a pooled fund to current investors.

C is incorrect because GIPS-compliant firms must not make statements referring to the performance of a current client or pooled fund investor as being "calculated in accordance with the GIPS standards," except for when a GIPS-compliant firm reports the performance of a segregated account to current clients or a pooled fund to current investors.

24. Correct answer: A.

A is correct. It is a recommendation but not a requirement that firms obtain independent third-party verification to claim GIPS compliance. Firms are required to include all discretionary, fee-paying portfolios in at least one composite. They must also present a minimum of five years of annual investment performance compliant with GIPS standards.

B is incorrect. It is a requirement to include all discretionary, fee-paying portfolios in at least one composite.

C is incorrect. It is a requirement to present a minimum of five years of annual investment performance compliant with GIPS standards.

25. Correct answer: A.

A is correct because according to Standard I(C) Misrepresentation, "Members and Candidates must not knowingly make any misrepresentations relation to investment analysis, recommendations, actions, or other professional activities." "Members or Candidates may use research conducted or models developed by others within the same firm without committing a violation The most common example relates to the situation in which one (or more) of the original analysts is no longer with the firm."

B is incorrect because according to Standard I(C) Misrepresentation, "Members or Candidates may use research conducted or models developed by others within the same firm without committing a violation The most common example relates to the situation in which one (or more) of the original analysts is no longer with the firm."

C is incorrect because according to Standard I(C) Misrepresentation, "Members or Candidates may use research conducted or models developed by others within the same firm without committing a violation The most common example relates to the situation in which one (or more) of the original analysts is no longer with the firm." "The firm may issue future reports without providing attribution to the prior analysts."

Questions 26~42 Relate to Quantitative Methods

26. Correct answer: B.

B is correct. The market-determined interest rate is equal to the real risk-free rate of return plus an inflation premium plus risk premiums for default risk, liquidity, and maturity. In this case, 12 = 3 + 5 + X. Solving for X: X = 4.

A is incorrect. 10% =12% − (5% − 3%)

C is incorrect. Eight percent is the sum of the real risk-free rate and expected inflation.

27. Correct answer: C.

C is correct because "with more than one compounding period per year, the future value formula can be expressed as $FV_N = PV[1 + (r_s/m)]^{mN}$ where r_s is the stated annual interest rate, m is the number of compounding periods per year, and N now stands for the number of years. Identifying N = 10 and PV = $7,500, we have for Account 1 (with m = 4): FV_{10} = $7,500 × $[1 + (0.03/4)]^{4\times10}$ = $10,113 and for Account 2 (with m = 365): FV_{10} = $7,500 × $[1 + (0.029/365)]^{365\times10}$ = $10,023. Hence, both accounts will have a balance above $10,000 in 10 years' time.

A is incorrect because Account 2 also allows the investor to meet their goal. With more than one compounding period per year, the future value formula can be expressed as $FV_N = PV[1 + (r_s/m)]^{mN}$ where r_s is the stated annual interest rate, m is the number of compounding periods per year, and N now stands for the number of years. Hence for Account 2, FV_{10} = $7,500 × $[1 + (0.029/365)]^{365\times10}$ = $10,023 which is greater than the required goal.

B is incorrect because Account 1 also allows the investor to meet their goal. With more than one compounding period per year, the future value formula can be expressed as $FV_N = PV[1 + (r_s/m)]^{mN}$ where r_s is the stated annual interest rate, m is the number of compounding periods per year, and N now stands for the number of years. Hence for Account 1, FV_{10} = $7,500 × $[1 + (0.03/4)]^{4\times10}$ = $10,113 which is greater than the required goal.

28. Correct answer: B.

B is correct. First calculate the present value of the three cash flows with the following formula:

$$PV = \frac{FV_N}{(1 + r)^N}$$

We obtain:

$\text{PV}_{\text{cash flow 1}} = \$100{,}000/1.03$ =\$97,087 (rounded)

$\text{PV}_{\text{cash flow 2}} = \$150{,}000/(1.03)^2$ =\$141,389 (rounded)

$\text{PV}_{\text{cash flow 3}} = \$200{,}000/(1.03)^3$ =\$183,028 (rounded)

Then, sum the three present values:

\$97,087 + \$141,389 + \$183,028 = \$421,504

Calculate the FV of \$421,504 ten years from now with the formula:

$FV_N = PV \times (1 + r)^N$

$FV_{10} = PV \times (1 + r)^{10}$

$FV_{10} = \$421{,}504 \times (1.03)^{10} = \$566{,}466$ (rounded)

The future value 10 years from now is \$566,466.

Alternatively, calculate directly the FV of each of the cash flows to the end of 10 years:

$FV_{10} = \$100{,}000 \times (1.03)^9 + \$150{,}000 \times (1.03)^8 + \$200{,}000 \times (1.03)^7$

= \$130,477 + \$190,016 + \$245,975

= \$566,468 (rounded).

A is incorrect. First calculate the future values of the three cash flows at the end of year three: $\$100{,}000 \times (1.03)^2 + \$150{,}000 \times 1.03 + \$200{,}000 = \$106{,}090 + \$154{,}500 + \$200{,}000 = \$460{,}590$. Then, calculate the FV of \$460,590 at the end of year 13: $\$460{,}590 \times (1.03)^{10} = \$618{,}994$.

C is incorrect. It is the sum of the future values of the three cash flows at the end of year three: $\$100{,}000 \times (1.03)^2 + \$150{,}000 \times 1.03 + \$200{,}000 = \$106{,}090 + \$154{,}500 + \$200{,}000 = \$460{,}590$.

29. Correct answer: C.

C is correct. The geometric mean return is calculated as:

$$R_G = \left[\prod_{t=1}^{T}(1 + R_t)\right]^{1/T} - 1$$

$= [(1 + 0.10) \times (1 - 0.02) \times (1 + 0.18) \times (1 - 0.12)]^{0.25} - 1$

$= 0.0286 \sim 2.9\%$

A is incorrect. It is the arithmetic average and is calculated as: $(10 - 2 + 18 - 12)/4 = 3.5\%$.

B is incorrect. It is the geometric average of the given numbers, but without adding one, i.e., $(10 \times -2 \times 18 \times -12)^{0.25} = 8.10\%$.

30. Correct answer: B.

B is correct.

$$\overline{X} = \frac{\sum_{i=1}^{n} X_i}{n}$$

= (−31 − 14 + 3 − 18 + 34 + 20 − 6 + 9 + 7 − 16)/10

= −12.00/10 = −1.20

where

X_i = the value of the ith observation

n = the number of observations in the sample

The sample variance is:

$$S^2 = \frac{\sum_{i=1}^{n} (X_i - \overline{X})^2}{(n-1)}$$

The sample standard deviation is the (positive) square root of the sample variance:

Value	**Deviation from Mean**	**Squared Deviation**
−31	−31 − (−1.2) = −29.8	888.04
−14	−14 − (−1.2) = −12.8	163.84
3	3 − (−1.2) = 4.2	17.64
−18	−18 − (−1.2) = −16.8	282.24
34	34 − (−1.2) = 35.2	1,239.04
20	20 − (−1.2) = 21.2	449.44
−6	−6 − (−1.2) = −4.8	23.04
9	9 − (−1.2) = 10.2	104.04
7	7 − (−1.2) = 8.2	67.24
−16	−16 − (−1.2) = −14.8	219.04
Sum of squared deviations		3,453.60
Divided by n − 1 (10 − 1)		3,453.60/9 = 383.73
Square root		$\sqrt{383.73}$= 19.59

A is incorrect. 17.56 is the sum of the absolute value of the deviations from mean divided by 9:

Value	**Absolute deviation from mean**
−31	|−31 − (−1.2)| = 29.8
−14	|−14 − (−1.2)| = 12.8
3	|3 − (−1.2)| = 4.2
−18	|−18 − (−1.2)| = 16.8
34	|34 − (−1.2)| = 35.2
20	|20 − (−1.2)| = 21.2
−6	|−6 − (−1.2)| = 4.8
9	|9 − (−1.2)| = 10.2
7	|7 − (−1.2)| = 8.2

−16	$\|-16-(-1.2)\| = 14.8$
Sum of absolute deviations	158
Divided by n− 1 (10 − 1)	158/9 =**17.56**

C is incorrect and is calculated by dividing the sum of squared deviations by 10 rather than 9: 3,453.60/10 = 345.36 and $\sqrt{345.36} = 18.58$.

31. Correct answer: A.

A is correct. First calculate the expected returns on securities A and B with the formula:

$$E(X) = \sum_{i=1}^{n} P(X_i)X_i$$

Expected return on security A = 0.6 × 25% + 0.4 × 20% = 15% + 8% = 23%

Expected return on security B = 0.6 × 30% + 0.4 × 20% = 18% + 8% = 26%

Then calculate the covariance of returns between securities A and B with the formula:

$$\mathrm{Cov}(R_A, R_B) = \sum_i \sum_j P(R_{A,i}, R_{B,j})(R_{A,i} - ER_A)(R_{B,j} - ER_B)$$

where

R_A and R_B = the returns on securities A and B, respectively

P = the joint probability

ER_A and ER_B = the expected returns of securities A and B, respectively

I and j = the line and column of the joint probability function table above

$$\mathrm{Cov}(R_A, R_B) = 0.6[(25-23)(30-26)] + 0.4[(20-23)(20-26)]$$

$$= 0.6[2 \times 4] + 0.4[(-3)(-6)] = 0.6 \times 8 + 0.4 \times 18 = 12$$

B is incorrect. In the covariance calculation, it uses the joint probabilities in the wrong positions:

$$\mathrm{Cov}(R_A, R_B) = 0.4[(25-23)(30-26)] + 0.6[(20-23)(20-26)]$$

$$= 0.4[2 \times 4] + 0.6[(-3)(-6)] = 0.4 \times 8 + 0.6 \times 18 = 14$$

C is incorrect. In the covariance calculation, it uses a joint probability of 0.5:

$$\mathrm{Cov}(R_A, R_B) = 0.5[(25-23)(30-26)] + 0.5[(20-23)(20-26)]$$

$$= 0.5[2 \times 4] + 0.5[(-3)(-6)] = 0.5 \times 8 + 0.5 \times 18 = 13$$

32. Correct answer: B.

B is correct. The updated probability P(FCF exceeded consensus | Acquisition) is 59%.

1. Calculate the unconditional probability that Abco will acquire the competitor firm:

   P(Acquisition) = (0.50 × 0.40) + (0.35 × 0.25) + (0.15 × 0.35) = 0.34, or 34%.

2. Calculate the updated probability that Abco exceeded consensus expectations for FCF given that they acquire the competitor firm:

   P(FCF exceeded consensus | Acquisition) = [P(Acquisition | FCF exceeded consensus)/P(Acquisition)] ×P(FCF exceeded consensus)= (0.40/0.34) × (0.50) = 0.59 or 59%.

A is incorrect because 34% is the unconditional probability that Abco acquires the competitor firm:

P(Abco acquires) = (0.50 × 0.40) + (0.35 × 0.25) + (0.15 × 0.35) = 0.34, or 34%.

C is incorrect because the updated probability was calculated in error:

[P(Acquisition | FCF exceeded consensus) × P(Acquisition)]/P(FCF exceeded consensus) = (0.40 × 0.34)/(0.50) = 0.27 or 27%

33. Correct answer: C.

C is correct. The number of trials is 10 (n), the number of successes is 6 (x), and the probability of success is 0.60 (p). By using the formula:

$$\mathrm{P}(X = x) = \frac{n!}{(n-x)!\,x!}p^x(1-p)^{n-x}$$

and the values given,

$$\mathrm{P}(X = 6) = \frac{10!}{(10-6)!\,6!}(0.6)^6(0.4)^4 = 25.08\%$$

A is incorrect. It is the given chance of success, 60%.

B is incorrect. It uses a probability of 0.40 instead than 0.60:

$$\frac{10!}{(10-6)!\,6!}(0.4)^6(0.6)^4 = 11.15\%$$

34. Correct answer: B.

B is correct. The investor requires a minimum return of ($30,000 + $10,000)/$700,000, or 5.71%. Roy’s safety-first model uses the excess portfolio’s expected return over the minimum return and divides that excess by the standard deviation for that portfolio:

Safety-first ratio = $[E(R_P) - R_L]/\sigma_P$, where

$E(R_P)$ = the expected return of portfolio P

R_L = the minimum return required by the investor

σ_P = the standard deviation of returns of portfolio P

Portfolio	**Safety-First Ratio**
1	0.2290
2	0.3300
3	(14% − 5.71%)/22% = 0.3768

The portfolio with the highest safety-first ratio minimizes the probability that the investor's portfolio will have a value lower than $700,000 at year end. The highest safety-first ratio is associated with Portfolio 3: 0.3768.

A is incorrect. The investor requires a minimum return of ($30,000 + $10,000)/$700,000 or 5.71 percent. Roy's safety-first model uses the excess portfolio's expected return over the minimum return and divides that excess by the standard deviation for that portfolio:

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where

$E(R_P)$ = is the expected return of portfolio P

R_L= the minimum return required by the investor

σ_P= the standard deviation of returns of portfolio P

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Safety-first ratio = $[E(R_P) - R_L]/\sigma_P$,

where

$E(R_P)$ = is the expected return of portfolio P

R_L = the minimum return required by the investor

σ_P = the standard deviation of returns of portfolio P

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35. Correct answer: C.

C is correct. In stratified random sampling, one divides the population into subpopulations and randomly samples from within the subpopulations.

A is incorrect. The approach described is called stratified random sampling. In stratified random sampling, one divides the population into subpopulations and randomly samples from within the subpopulations.

B is incorrect. The approach described is called stratified random sampling. In stratified random sampling, one divides the population into subpopulations and randomly samples from within the subpopulations.

36. Correct answer: C.

C is correct because a random sample offers a good representation of the population, therefore we can simulate sampling from the population by sampling from the observed sample. In other words, the bootstrap mimics the process by treating the randomly drawn sample as if it were the population.

A is incorrect because the idea behind bootstrap is to mimic the process of performing random sampling from a population. The difference lies in the fact that we have no knowledge of what the population looks like, except for a sample with size n drawn from the population. In other words, only one sample, not multiple samples, is taken from the population. The subsequent resamples are then taken from the original sample and not directly from the population.

B is incorrect because in 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). Hence items are drawn with replacement, not without.

37. Correct answer: B.

B is correct. The underpricing result is not economically meaningful when the average transaction cost is taken into consideration.

A is incorrect. As explained in C, the result is statistically significant. However, there is no arbitrage opportunity in this case because the transaction cost is too high (i.e., not economically meaningful).

C is incorrect. The result should be statistically significant as a p-value of 0.0012 is the smallest level of significance that the null hypothesis is rejected. In this case, it is far less than level of significance of 0.01.

38. Correct answer: C.

C is correct. A t-test is best used in a test of the difference between two population means when we can assume they are normally distributed and that the unknown variances are equal

A is incorrect because a z-test is not appropriate in the case of testing the difference between two population means. A z-test is used in the case of a hypothesis test of the population mean where the variance is known or in the case of an unknown variance when the sample is large and we can rely on the central limit theorem.

B is incorrect because we use an approximate t-test in order to test the difference between two population means that we can assume are normally distributed but the population variances are unknown and cannot be assumed equal.

39. Correct answer: B.

B is correct. According to the test statistic, $\mathrm{t} = \frac{\bar{d} - \mu_{d0}}{s_{\bar{d}}}$, the lower the standard error in the denominator, the higher the value of the t-statistic. The t-statistic calculation includes the sample mean difference in the numerator. Therefore, a lower standard error (denominator) relative to the sample mean difference (numerator) results in a higher t-statistic value.

A is incorrect because a paired comparison test is used to test mean differences when we believe that the samples are dependent; it is not used to test whether samples are dependent or independent.

C is incorrect because if the null hypothesis is rejected, the evidence is statistically significant.

40. Correct answer: C.

C is correct because the **residual** for the ith observation, e_i, is how much the observed value of Y_i differs from the Y_i estimated using the regression line.

A is incorrect because the **residual** for the ith observation, e_i, is how much the observed value of Y_i differs from the Y_i estimated using the regression line.

B is incorrect because the **residual** for the ith observation, e_i, is how much the observed value of Y_i differs from the Y_i estimated using the regression line.

41. Correct answer: A.

A is correct because the percentage of the variation in the short-term rate that is explained by the inflation rate is the coefficient of determination, computed as sum of squares regression/sum of squares total:

17.3009/37.5308 = 0.461 = 46.1% ≈ 46%.

B is incorrect because it computes the coefficient of determination as sum of squares error/sum of squares total:

20.2299/37.5308 = 0.5390 = 53.9% ≈ 54%.

C is incorrect because it incorrectly considers the coefficient of determination as equal to the mean square error:

0.6130 = 61.30% ≈ 61%.

42. Correct answer: C.

C is correct because we can see from the equation for the standard error of the forecast that the larger the sample size (n) in the regression estimation, the smaller the standard error of the forecast.

A is incorrect because the better the fit of the regression model, the smaller the standard error of the estimate (s_e) and, therefore, the smaller standard error of the forecast. Moreover, once we have this estimate of the standard error of the forecast, determining a prediction interval around the predicted value of the dependent variable ($\hat{Y}_f$) is very similar to estimating a confidence interval around an estimated parameter. The prediction interval is $\hat{Y}_f \pm t_{critical\, for \frac{\alpha}{2}} s_f$. Thus, a smaller standard error of the estimate will result in a narrower prediction interval.

B is incorrect because "the **standard error of the forecast** is

$$S_f = S_e \sqrt{1 + \frac{1}{n} + \frac{\left(X_f - \bar{X}\right)^2}{\sum_{i=1}^{n}(X_i - \bar{X})^2}}$$

The standard error of the forecast depends on the variation of the independent variable

$$\sum_{i=1}^{n}(X_i - \bar{X})^2$$

From the equation of the standard error of the forecast, the smaller variation of the independent variable will increase the standard error of the forecast, and thus will result in a wider prediction interval.

Questions 43~62 Relate to Economics

43. Correct answer: C.

C is correct because 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, thereby exhibiting an inverse relationship.

A is incorrect because the 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 bankers in an economy come to the view that they need to retain only 10 percent of any money deposited with them. [Not the fraction that can be lent out, which would be 1 minus the reserve requirement] This is known as the reserve requirement.

44. Correct answer: B.

B is correct because price elasticity of demand also depends on the length of time within which the demand schedule is being considered.

A is incorrect because price elasticity will be higher if there are many close substitutes for the product.

C is incorrect because price elasticity of demand measures the percentage not the amount of change in the quantity demanded given a percentage change in the price of a given product.

45. Correct answer: A.

A is correct. On rearrangement, the demand function is:

$$Q_{\text{Tennis Match}} = 45 - 5.0 \times P_{\text{Tennis Match}}$$

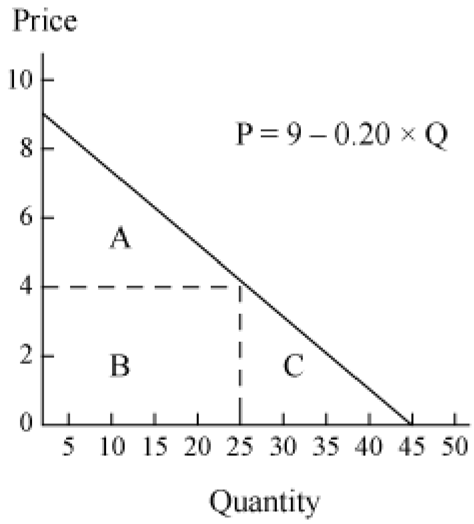
The number of matches played per month at $4.00/match = 45 – 5.0 × 4.00 = 25

The y-intercept of the demand curve occurs when Q = 0, P = 9

The x-intercept of the demand curve occurs when P = 0, Q = 45

In addition to the per play charge, the club will be able to charge the consumer surplus: the area under the demand curve above the current price per match to a total of 25 matches: 0.5 × ($9.00 – $4.00) × 25 = $62.50.

This is illustrated in the diagram as triangle A.



C is incorrect. It is the triangle formed under the demand curve to the right of the 25 matches: 0.5 × (45 – 25) × $4 = $40 (This is triangle C).

B is incorrect. It is consumer surplus plus the rectangle below it to the 25 matches played, i.e., 0.5 × ($9.00 – $4.00) × 25 + (4 × 25) = $162.50 (triangles A plus B).

46. Correct answer: A.

A is correct. Marginal cost per unit, in the short run, decreases at low levels of output as a result of economies from greater specialization. At higher levels of output, however, it eventually increases because of the law of diminishing returns.

B is incorrect. Assuming a given price per unit (i.e., a flat marginal revenue curve), the profit-maximizing output must be above the minimum point on the marginal cost curve. That is, MC must be increasing at MR = MC.

C is incorrect. At higher levels of production, marginal cost eventually increases because of the law of diminishing returns.

47. Correct answer: B.

B is correct because consumers will buy less because the increase in real income prompts the consumer to buy less of the inferior good in favor of its preferred substitutes.

C is incorrect because if the good is inferior, the income effect and the substitution effect work in opposite directions.

A is incorrect because in virtually every case in the real world, the law of demand holds: A decrease in price results in an increase in quantity demanded, resulting in a negatively sloped demand curve. In a few unusual cases, however, we may find a positively sloped demand curve—a decrease (increase) in price may result in a decrease (increase) in the quantity demanded. These unusual cases are called Giffen goods and Veblen goods.

48. Correct answer: A.

A is correct because this scenario is called first-degree price discrimination, where a monopolist can charge each customer the highest price the customer is willing to pay.

B is incorrect because in second-degree price discrimination the monopolist offers a menu of quantity-based pricing options designed to induce customers to self-select based on how highly they value the product.

C is incorrect because third-degree price discrimination happens when customers are segregated by demographic or other traits.

49. Correct answer: A.

A is correct. Each company will consider the other's reaction in selecting its strategy. Using the following summary, it is best for both chains to provide 24-hour service.

Chain	Consideration		Best Decision
1	**If it opens for 24 hours**, it will see a higher payoff regardless of what Chain 2 does.		Open for 24 hours
	Chain 2 Closes at 9 p.m.	**Chain 2 Opens for 24 hours**	
	Chain 1 earns 540 instead of 180	Chain 1 earns 108 instead of 55	
2	**If it opens for 24 hours**, it will see a higher payoff regardless of what Chain 1 does.		Open for 24 hours
	Chain 1 Closes at 9 p.m.	**Chain 1 Opens for 24 hours**	
	Chain 2 earns 592 instead of 290	Chain 2 earns 140 instead of 75	

B is incorrect because it produces the highest combined profit from all combinations but is not relevant for any 1 chain in this market environment.

C is incorrect. As indicated in the table, both chains have an incentive to open for 24 hours because they will do better regardless of what their competitor does.

50. Correct answer: A.

A is correct. A boom in the stock market increases the value of financial assets and household wealth. An increase in household wealth increases consumer spending and shifts the aggregate demand curve to the right.

B is incorrect. An increase in taxes decreases household wealth and shifts the aggregate demand to the left.

C is incorrect. A decrease in real estate values decrease household wealth and shifts the aggregate demand to the left.

51. Correct answer: B.

B is correct because the neoclassical growth model assumes that the production function exhibits diminishing marginal productivity with respect to any individual input. Diminishing marginal productivity means that at some point the extra output obtained from each additional unit of the input will decline.

A is incorrect because an increase in any input will increase output unless the economy is operating at full potential, at which point output will not increase.

C is incorrect because the neoclassical growth model "assumes that the production function has constant returns to scale. This means that if all the inputs in the production process are increased by the same percentage, then output will rise by that percentage. Thus, doubling all inputs would double output.

52. Correct answer: A.

A is correct because in the recovery phase actual output is at its lowest level relative to potential output. Economic activity, including consumer and business spending, is below potential but is starting to increase, closing the negative output gap.

B is incorrect because in the slowdown phase the positive output gap starts to narrow but remains positive.

C is incorrect because in the expansion phase the positive output gap opens.

53. Correct answer: C.

C is correct. The participation ratio (or activity ratio) is the ratio of the number of people in the labor force to the total population of working-age people, and the unemployment rate is the ratio of the number of unemployed to the number of people in the labor force. The labor force is the numerator in the participation ratio, and the denominator is the unemployment rate. Therefore, assuming all else remains unchanged, an increase in the number of people included in the labor force would cause the participation ratio to increase and unemployment rate to decrease.

A is incorrect. Although a decrease in the total number of unemployed people would decrease the unemployment rate, this would not have a direct effect on the participation rate.

B is incorrect. Although a decrease in the total population of working age people would increase the participation rate if the size of the labor force remained unchanged, this would have no direct effect on the unemployment rate.

54. Correct answer: B.

B is correct because in a slowdown the inventory-sales ratio increases. Signals weakening economy.

A is incorrect because in a recovery the ratio begins to fall as sales recovery outpaces production.

C is incorrect because in a contraction the ratio begins to fall back to normal.

55. Correct answer: C.

C is correct because as an economy slows and unemployment rises, government spending expenditure on social insurance and unemployment benefits will also rise and add to aggregate demand. This is known as an automatic stabilizer.

A is incorrect because a decrease in corporate tax rates is a discretionary fiscal policies. Automatic stabilizers should be distinguished from discretionary fiscal policies, such as changes in government spending or tax rates, which are actively used to stabilize aggregate demand.

B is incorrect because new public spending on social goods and infrastructure, such as hospitals is an example of a discretionary fiscal policy. Automatic stabilizers should be distinguished from discretionary fiscal policies, such as changes in government spending or tax rates, which are actively used to stabilize aggregate demand.

56. Correct answer: B.

B is correct because the issue of significant debt may be overstated because the debt is owed internally to fellow citizens.

A is incorrect because deficits may have no net impact because the private sector may act to offset fiscal deficits by increasing [not decreasing] saving in anticipation of future increased taxes.

C is incorrect because government borrowing may divert private sector investment from taking place (an effect known as crowding out); if there is a limited amount of savings to be spent on investment, then larger government demands will lead to higher interest rates and lower private sector investing.

57. Correct answer: B.

B is correct because with tight fiscal policy/easy monetary policy: If a fiscal contraction is accompanied by expansionary monetary policy and low interest rates, then the private sector will be stimulated and will rise as a share of GDP, while the public sector will shrink.

A is incorrect, because if both fiscal and monetary policy are easy, then the joint impact will be highly expansionary leading to—lower interest rates (at least if the monetary impact is larger), and growing private and public sectors, without the private sector's share of GDP growing.

C is incorrect, because under Easy fiscal policy/tight monetary policy: we have higher output and higher interest rates, and government spending [not the private sector] will be a larger proportion of overall national income.

58. Correct answer: A.

A is correct. As a country opens up to trade, the benefit accrues to the abundant factor, which is labor in Country A.

B is incorrect. The favorable impact goes to the factor in relative abundance, which includes labor and excludes capital in Country A.

C is incorrect. Country B has an abundance of capital, therefore the favorable benefit to capital lies in Country B, not in Country A.

59. Correct answer: C.

C is correct. Closely affiliated with The World Bank Group, the International Bank for Reconstruction and Development (IBRD) provides low or no-interest loans and grants to developing countries that have unfavorable credit or no access to international credit markets.

A is incorrect. This is a function of the IMF.

B is incorrect. This is a function of the World Trade Organization.

60. Correct answer: A.

A is correct. Change in the nominal exchange rate =

$$\left(1+\frac{\Delta R_f^d}{R_f^d}\right)\times\frac{\left(1+\frac{\Delta P_d}{P_d}\right)}{\left(1+\frac{\Delta P_f}{P_f}\right)}-1=(1+5\%)\times\frac{(1+1.5\%)}{(1+2\%)}-1=4.5\%$$

B is incorrect because the change in the real exchange rate is not included:

[(1 + 1.5%)/(1 + 2%)] – 1 = –0.5%.

C is incorrect because the change in the price levels are inverted:

(1 + 5%) × [(1 + 2%)/(1 + 1.5%)] – 1 = 5.5%.

61. Correct answer: B.

B is correct.

Step 1: Find the spot rate for the EUR/AUD

Spot = Forward Rate – Forward Points = 1.4300 – (400/10,000) = 1.3900

Step 2: Calculate current cross rate

(USD/AUD) = (EUR/AUD) × (USD/AUD) = 0.7500 × 1.3900 = 1.0425

A is incorrect. It incorrectly subtracts forward premium from 1.

(1 – 400/10000) × 1.43 = 1.3728

1.3728 × 0.75 = 1.0296

C is incorrect. It incorrectly adds forward premium to 1.

(1 + 400/10000) × 1.43 = 1.4872

1.4872 × 0.75 = 1.1154

62. Correct answer: B.

B is correct. The currency with the higher (lower) interest rate will always trade at a discount (premium) in the forward market. The lower interest rate in the domestic country will be offset by the appreciation of the domestic country's currency over the investment horizon.

A is incorrect because the forward rate is trading at a premium and not at a discount.

C is incorrect because the forward rate does not equal the spot rate.

Questions 63~89 Relate to Financial Statement Analysis

63. Correct answer: B.

B is correct. Companies should disclose in management commentary any critical accounting policies that require management to make subjective judgements that may have a significant impact on reported financial results. These subjective judgements should be carefully reviewed because they may materially alter an analyst's conclusions about the future performance or financial position of a company

A is incorrect because companies are not required to disclose future revenue projections in the management's discussion and analysis section of financial statements, but should highlight any favorable or unfavorable trends or uncertainties that may impact future performance or financial position.

C is incorrect because although management commentary is typically unaudited, it is not a reason why management commentary is of importance to analysts. Rather, analysts should be aware that management commentary is unaudited and interpret accordingly.

64. Correct answer: B.

B is correct. Interim reports are provided semi-annually or quarterly, depending on applicable regulatory requirements.

A is incorrect. Interim reports are not audited.

C is incorrect. Interim reports generally present the four basic financial statements and condensed notes.

65. Correct answer: C.

C is correct. The IOSCO is not a regulator of financial markets. Its role is to assist in attaining the goal of uniform regulation and enforcement of international financial standards and in attaining the goal of cross-border cooperation in combating violations of securities and derivative laws.

A is incorrect. The IOSCO assists in attaining the goal of uniform regulation of international financial standards including IFRS, but the IASB does not report to it.

B is incorrect. The IOSCO is not a regulatory authority.

66. Correct answer: B.

B is correct. Because Company A owns more than 50% of the shares in Company B it must present consolidated financial statements, which will include 100% of Company B's revenues and expenses.

A is incorrect. All subsidiaries, even those that are partially owned, are included in a consolidated statement.

C is incorrect. All subsidiary revenues and expenses are included, even if they are not 100% owned by the parent.

67. Correct answer: B.

B is correct. First determine the basic EPS, calculated as follows:

Basic EPS=$\frac{\text{Net income}-\text{Preferred dividends}}{\text{Weighted average number of shares outstanding}}=\frac{\$200{,}000-\$0}{\$125{,}000}=\$1.6$

Next, calculate diluted EPS using the if-converted method for the convertible debt:

Diluted EPS=

$$\frac{\text{Net income}+\text{ After}-\text{tax interest on convertible debt}-\text{Preferred dividends}}{\text{Weighted average number of shares outstanding}+\text{Additional common shares that would have been issued at conversion}}$$

=$\frac{\$200{,}000+[\$60{,}000\times0.12\times(1-0.15)]-0}{\$125{,}000+3{,}000}$=\$1.61

The calculated diluted EPS is greater than the basic EPS. By definition, the diluted EPS is always equal to or less than basic EPS and this means that the diluted EPS will be \$1.60.

C is incorrect because it miscalculates the effect of the after-tax interest on debt in the if-converted method used for the convertible debt to determine the diluted EPS:

Diluted EPS=

$$\frac{\text{Net income}-\text{ After}-\text{tax interest on convertible debt}-\text{Preferred dividends}}{\text{Weighted average number of shares outstanding}+\text{Additional common shares that would have been issued at conversion}}$$

=$\frac{\$200{,}000-[\$60{,}000\times0.12\times(1-0.15)]-0}{125{,}000+3{,}000}=\frac{\$193{,}880}{128{,}000}$=\$1.51

The \$1.51 is a result due to mistakenly subtracting the after-tax interest on the debt. It should be added.

A is incorrect because it shows a diluted EPS greater than basic EPS.

The first step is to determine the basic EPS, which is calculated as follows:

Basic EPS=$\frac{\text{Net income}-\text{Preferred dividends}}{\text{Weighted average number of shares outstanding}}=\frac{\$200{,}000-\$0}{\$125{,}000}=\$1.60$

Next, the if-converted method is used for the convertible debt to calculate the diluted EPS:

Diluted EPS=

$$\frac{\text{Net income} + \text{ After} - \text{tax interest on convertible debt} - \text{Preferred dividends}}{\text{Weighted average number of shares outstanding} + \text{Additional common shares that would have been issued at conversion}}$$

$=\frac{\$200{,}000+[\$60{,}000\times 0.12\times(1-0.15)]-0}{125{,}000+3{,}000}=\frac{\$206{,}120}{128{,}000}$=$1.61

The higher diluted EPS of $1.61 cannot be used because by definition, the diluted EPS is always equal to or less than basic EPS.

68. Correct answer: A.

A is correct. The gross profit is sales minus cost of sales and the gross profit margin is calculated as gross profit divided by sales. The calculations for the three companies are as follows:

Company A: Gross profit = $40,000 – $21,000 = $19,000 and the gross profit margin is 47.5% ($19,000/$40,000). Of the three companies, this gross profit margin is the highest.

Company B: Gross profit = $200,000 – $110,000 = $90,000 and the gross profit margin is 45.0% ($90,000/$200,000).

Company C: Gross profit = $450,000 – $240,000 = $210,000 and the gross profit margin is 46.7% ($210,000/$450,000).

C is incorrect because Company B has the highest net profit margin (net income divided by sales) at 19.0% ($38,000/$200,000), but it does not have the highest gross profit margin ([Sales – Cost of sales]/Sales).

B is incorrect because Company C has the highest gross profit (sales – cost of sales) at $210,000 ($450,000 – $240,000) and operating profit margin (operating income divided by sales) at 34.9% ($157,000/$450,000), but it does not have the highest gross profit margin ([Sales – Cost of sales]/Sales).

69. Correct answer: C.

C is correct. Within a liquidity-based presentation, assets and liabilities are presented broadly in order of liquidity. The asset section generally begins with liquid items such as cash and marketable securities.

A is incorrect because land use rights are considered to be less liquid than marketable securities and would be expected to appear near the bottom of the asset section.

B is incorrect because deferred revenue is a liability and would not be found within the asset section of a balance sheet.

70. Correct answer: B.

B is correct. Current assets are assets expected to be sold, used up, or otherwise realized in cash within one year or one operating cycle of a business, whichever is greater. A receivable expected to be collected within one operating cycle is therefore a current asset.

A is incorrect because a trade payable is considered a current liability.

C is incorrect because goodwill is not expected to be sold or used up within one year or one operating cycle of a business. Long-term assets such as goodwill are classified as non-current assets**.**

71. Correct answer: B.

B is correct. Treasury shares are issued shares that have been repurchased by the company and held rather than canceled.

A is incorrect because other reserves are the part of a company's comprehensive income that is reflected under equity in accumulated other comprehensive income.

C is incorrect because minority interest, or non-controlling interest, is the equity interest of minority shareholders in the subsidiary companies that have been consolidated by the parent (controlling) company but that are not wholly owned by the parent company.

72. Correct answer: C.

C is correct. Under US GAAP, bank overdrafts are not considered part of cash and cash equivalents and are classified as financing cash flows.

A is incorrect. Both direct method and indirect method are allowed under IFRS and US GAAP, and the direct method is encouraged under both.

B is incorrect. Under IFRS, interest paid could be reported either as an operating or financing cash flow.

73. Correct answer: B.

B is correct.

Cost of goods sold	$500
Minus decrease in inventory	–$30
Purchases from suppliers	$470
Plus decrease in accounts payable	$25
Cash paid to suppliers	$495

A is incorrect. Decrease in inventory treated as an increase and decrease in AP treated as decrease in cash flow: 500 + 30 – 25 = 505.

C is incorrect. Decrease in accounts payable treated as a reduction rather than an increase in cash flow: 500 – 30 – 25 = 445.

74. Correct answer: B.

B is correct. The cash paid to suppliers is calculated as follows:

	$ Millions
Cost of goods sold	12,831
Plus: Increase in inventory	792
Purchases	13,623
Less: Increase in accounts payable	295
Cash paid to suppliers	**13,328**

A is incorrect. This answer reverses the direction for A/P and inventory

Cost of goods sold	12,831
LESS Increase in inventory	792
Purchases	12,039
Plus: Increase in accounts payable	295
Cash paid to suppliers	**12,334**

C is incorrect. This answer ignores inventory

Cost of goods sold	12,831
Plus Increase in inventory (error)	**0**
Purchases	12,831
Less: Increase in accounts payable	(295)
Cash paid to suppliers	**12,536**

75. Correct answer: C.

C is correct. Segment A most likely qualifies as a reportable segment because its revenue amounts to 10.4% of total revenues, which is above the 10% threshold for the revenue test.

A is incorrect. The qualifying elements are assets, revenues, and operating profit. Segments are not qualified based on capital expenditures.

B is incorrect. Segment A's assets amount to 5% of total assets, which falls below the 10% threshold.

76. Correct answer: B.

B is correct. Financial ratios alone are not sufficient to determine the creditworthiness of a company. Other factors must also be considered, such as examining the entire operation of the company, meeting with management, touring company facilities, and so forth.

A is incorrect because ratio analysis by itself does enable a financial analyst to evaluate past performance.

C is incorrect because ratio analysis by itself does enable the assessment of a company's current financial position.

77. Correct answer: A.

A is correct.

Total Capitalized Inventory Cost	**$ millions**
Fixed production costs	3.0
Raw materials	6.0
Labor costs	4.0
Freight-in	1.0
Total capitalized inventory cost	14.0

B is incorrect. This answer incorrectly includes warehousing costs for finished goods: $14 + $2 = $16 million.

C is incorrect. This answer incorrectly excludes freight-in.

78. Correct answer: C.

C is correct. During a period of rising prices, ending inventory under LIFO will be lower than that of FIFO and cost of goods sold higher; therefore, inventory turnover (Cost of goods sold/Average inventory) will be higher.

A is incorrect. During a period of rising prices, ending inventory under LIFO will be lower than that of FIFO; therefore, current assets will be lower, and the current ratio will be lower.

B is incorrect. During a period of rising prices, cost of goods sold under LIFO will be higher than that of FIFO; therefore, gross margin will be lower.

79. Correct answer: A.

A is correct. US GAAP does not allow the reversal of inventory write-downs, therefore it would not be a disclosure.

B is incorrect. This is a required disclosure of both IFRS and US GAAP.

C is incorrect. This is a required disclosure of both IFRS and US GAAP.

80. Correct answer: A.

A is correct.

	($ thousands)
EBIT = Sales – COGS – S&A = 11,159 – 9,898 – 872 =	389
Add back depreciation related to capitalized interest	34
Adjusted EBIT	423
Interest expense: Income statement	122
Add capitalized interest: Notes to financial statement	66
Total interest paid	188

The interest coverage ratio requirement has been exactly achieved.

Because the bonds were issued at par, no amortization of premiums or discounts is included in interest paid.

B is incorrect. It does not adjust EBIT for depreciation related to interest = 389/188 = 2.07: violates threshold. This is (2.07/2.25 – 1) = 8.8% below the threshold (more than 5% below).

C is incorrect. It is the unadjusted TIE = 389/122 = 3.19: exceeds threshold. This is (3.19/2.25 – 1) = 41.7% above the threshold (more than 5%).

81. Correct answer: A.

A is correct. Using the double declining balance method will result in the highest asset turnover ratio (Total asset turnover = Total revenue/Average total assets) for the company. This is because its higher amortization expense in earlier periods ($3,333 in Year 1, compared with $1,667 and $1,875 for straight line and units of production, respectively) decreases the company's average total assets (the denominator), causing its asset turnover ratio to be higher than under the other two methods. The following are the amortization expense calculations under each method for Year 1:

Method	**Calculation ($ thousands)**	**Amortization Expense in Year 1 ($ thousands)**
Double declining balance	Rate is twice the straight-line rate. 1/3 × 2 = 66.7% 66.7% × 5,000 =	**$3,335**
Straight line	(Cost – Residual value)/Useful life ($5,000 × $0)/3 =	$1,667
Units of production	Cost per unit = Cost/Production capacity ($5,000/800 units) = $6.25 Year 1 = 6.25 × 300 units =	$1,875

B is incorrect. See table.

C is incorrect. See table.

82. Correct answer: C.

C is correct. IFRS does not require disclosure of the original date of acquisition.

A is incorrect. Under the cost model, the carrying amount must be disclosed by companies using the revaluation model.

B is incorrect. The details of how fair value was obtained must be disclosed by companies using the revaluation model.

83. Correct answer: C.

C is correct. Under US GAAP, deferred tax assets must be assessed at each balance sheet date. If there is any doubt whether the deferral will be recovered, the carrying amount should be reduced to the expected recoverable amount. The asset is reduced by increasing the valuation allowance. Should circumstances change so that it is more probable that the deferred tax benefits will be recovered, the deferred asset account will be increased (and the valuation allowance decreased). An increase in the carry-forward period for tax losses extends the possibility that benefits will be realized from the deferred tax asset and would likely result in a decrease in the valuation allowance and an increase in the deferred tax asset.

A is incorrect. Interest rate changes are not related; there is no discounting of the future benefits from the deferred tax asset.

B is incorrect. A reduction in tax rates will permanently decrease the carrying value of the deferred tax asset; deferred tax assets and liabilities arise only from temporary differences.

84. Correct answer: A.

A is correct. The market rate of interest is the rate demanded by the bond purchaser given the risks associated with future cash payment obligations of the particular bond issue.

B is incorrect because the effective interest rate is the market rate of interest at the time of issuance (not after issuance).

C is incorrect because the coupon rate is the interest rate promised in the contract, which is the rate used to calculate the periodic interest payments.

85. Correct answer: A.

A is correct. Leases can provide less costly financing. Because of the tax and economic advantages enjoyed by lessors, they are often able and willing to offer attractive lease terms resulting in less costly financing to the lessees.

B is incorrect. Lessors (the owners) are normally in a better position to take advantage of tax deductions, such as depreciation and interest.

C is incorrect. Cash from operations would be lower with an operating lease compared to purchasing the asset.

86. Correct answer: C.

C is correct.

	2012	**2013 Calculations (¥ millions)**	**2013**
Debt to capital	12.7%	2,300/(2,300 + 17,000) = 11.9%	11.9%
Interest coverage	2.9	(375 + 200 + 125)/200 = 3.5	3.5 times

Both ratios have improved from 2012 to 2013, thus the company is more solvent in 2013.

A is incorrect. It calculates interest coverage using net income instead of EBIT (1.875), a deterioration, and correctly notes the debt to capital as an improvement.

B is incorrect. It calculates interest coverage using net income instead of EBIT (1.875), and interprets the change in debt to capital as a deterioration because the value has decreased.

87. Correct answer: A.

A is correct. High financial reporting quality provides useful information to decision makers. Since foreign exchange gains and losses may not recur, they should be disclosed separately and not included in cost of goods sold.

B is incorrect. Long-term leases for customized pieces of equipment should be reported as finance leases and conforms to IFRS, therefore this is not low quality reporting.

C is incorrect. If properly disclosed, an increase in EPS from the sale of a subsidiary does not represent low quality financial reporting, but it may be low quality earnings.

88. Correct answer: B.

B is correct. Poor internal controls provide opportunities for errors or fraud to be incorporated in financial reporting without being detected.

A is incorrect. Rationalization takes place after the low-quality reporting act has taken place and is a psychological process used by individuals to justify their actions. Poor internal controls are not a psychological process.

C is incorrect. Motivation results from personal pressures or corporate pressures to report on a low-quality basis. Poor internal controls provide the vehicle through which low-quality reporting can be concealed, not the motivation for it.

89. Correct answer: B.

B is correct. Company A has the highest EBITDA/Average assets and the lowest Debt/EBITDA. It is likely to receive the highest credit rating since these measures suggest it is best able to repay debt. Inventory turnover does not measure debt paying ability.

A is incorrect. Company C is less able to repay its debt based on its lower EBITDA/Average Assets and its higher Debt/EBITDA.

C is incorrect. Company B is less able to repay its debt based on its lower EBITDA/Average Assets and its higher Debt/EBITDA.

Questions 90~107 Relate to Corporate Issuers

90. Correct answer: A.

A is correct. Sell-out rights protect minority shareholders in acquisition situations by forcing acquirers to buy out minority shareholders at a fair price, even if those shareholders initially voted against the acquirer's offer.

B is incorrect. Clawback provisions allow companies to recover executive remuneration under certain circumstances, to the benefit of all shareholders.

C is incorrect. Covenants are the terms and conditions of lending agreements, enabling creditors to specify the actions an issuer is obligated to perform or is prohibited from performing. They are put in place to protect creditors.

91. Correct answer: A.

A is correct. Stranded asset risk refers to carbon-intensive assets that are at risk of no longer being economically viable because of changes in regulation or investor sentiment and would most likely apply to the energy sector.

B and C are incorrect. This risk applies more directly to the energy sector than to industrial or financial stocks.

92. Correct answer: A.

A is correct. Using a financial calculator: $CF_0 = -12{,}500$, $CF_1 = 2{,}000$, $CF_2 = 4{,}000$, $CF_3 = 5{,}000$, $CF_4 = 2{,}000$, i = 8%, and solving for NPV: NPV = −1,779.57.

Alternatively, the NPV is calculated as follows:

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

$= -12500 + (2000/1.08) + (4000/1.08^2) + (5000/1.08^3) + (2000/1.08^4)$

$= -1{,}779.57 \sim$ **−1,780**.

B is incorrect. It uses the average accounting return (2000 + 4000 + 5000 + 2000)/4 = 3,250 as an annuity: N = 4, I/Y = 8, PMT = 3250, FV = 0, and solves for PV: PV = 10,764.41. Then the initial investment is subtracted from the calculated PV as follows: 10,764.41 − 12,500 = −1735.59.

C is incorrect. It is calculated by assuming that the positive cash flows are received at the beginning of each year: $-12500 + 2000 + (4000/1.08) + (5000/1.08^2) + (2000/1.08^3) = -921.94$.

93. Correct answer: B.

B is correct. All of the incremental cash flows arising from a project should be analyzed on an after-tax basis.

C is incorrect. Only sunk costs should be ignored in a project’s cash flow estimation, but not any externalities. Sunk costs cannot be recovered once they have been incurred. Externalities (both positive and negative ones) are the effects of an investment decision on other things beside the investment itself; they should therefore be included in the cash flow estimation.

A is incorrect. Financing costs like interest costs are excluded from calculations of operating cash flows. The financing costs are reflected in the required rate of return for an investment project. If financing costs are included, we would be double-counting these costs.

94. Correct answer: A.

A is correct. "Paying too much attention to short-run accounting numbers can result in a company choosing investments that are not in the long-run economic interests of its shareholders." EPS is an accounting-based measure.

B is incorrect because "ignoring sunk costs is difficult for companies to do [and is a pitfall]. Further, not identifying the economic alternatives (real and financial) that are the opportunity costs is probably the biggest failure by companies in their analyses. Only costs that change with the decision are relevant."

C is incorrect because "economic responses to an investment often affect its profitability, and these responses have to be correctly anticipated by companies." The pitfall is to ignore these responses.

95. Correct answer: C.

C is correct because "commercial paper is a short-term, unsecured instrument typically issued by large and well-rated companies."

A is incorrect because "commercial paper is a short-term, unsecured instrument typically issued by large and well-rated companies... Although a significant amount of asset-backed commercial paper exists, most commercial paper is unsecured, with no specific collateral."

B is incorrect because "commercial paper is a short-term, unsecured instrument typically issued by large and well-rated companies."

96. Correct answer: B.

B is correct because Company 2 has the highest quick ratio.

Quick ratio = (Cash + Short-term marketable instruments + Receivables) / Current liabilities

The following is calculated in $ millions:

Company 1 quick ratio = (2.5+4.0+2.0)/5.0 = 1.70

Company 2 quick ratio = (2.0+1.0+2.0)/2.5 = 2.00

Company 3 quick ratio = (1.5+1.0+1.0)/2.0 = 1.75

A is incorrect because Company 1 has the highest cash ratio but not the highest quick ratio.

Cash ratio = (Cash + Short-term marketable instruments)/Current liabilities

The following is calculated in $ millions:

Company 1 cash ratio = (2.5+4.0)/5.0 = 1.30

Company 2 cash ratio = (2.0+1.0)/2.5 = 1.20

Company 3 cash ratio = (1.5+1.0)/2.0 = 1.25

C is incorrect because Company 3 has the highest current ratio but not the highest quick ratio.

Current ratio = (Cash + Short-term marketable instruments + Receivables + Inventory) / Current liabilities

The following is calculated in $ millions:

Company 1 current ratio = (2.5+4.0+2.0+1.0)/5.0 = 1.90

Company 2 current ratio = (2.0+1.0+2.0+1.0)/2.5 = 2.40

Company 3 current ratio = (1.5+1.0+1.0+3.0)/2.0 = 3.25

97. Correct answer: C.

C is correct because the liquidation costs for selling the full amount of marketable securities and delaying payment on $310,000 amount of account payable is optimal. The amount raised ($409,500) is also sufficient to meet the amount required ($400,000).

Liquidation cost of the $100,000 marketable securities = $100,000×0.005 = $500

Amount raised from the sale of marketable securities = $100,000–$500 = $99,500

Remaining liquidity from the delay of paying accounts payable = $300,500 ≈ $310,000

Liquidation costs of the $310,000 of accounts payable = $310,000×0.02 = $6,200

Total cost = $500+$6,200 = $6,700.

Total funding = $99,500 + $310,000 = $409,500.

A is incorrect because the liquidation costs for delaying payment on $400,000 of accounts payable is not optimal.

Liquidation costs of the $400,000 of accounts payable = $400,000 × 0.02 = $8,000

B is incorrect because a mistake was made by ignoring the brokerage cost of marketable securities, meaning the amount raised ($399,500) is insufficient to fully meet the short-term need of $400,000.

Liquidation cost of the $100,000 marketable securities = $100,000 × 0.005 = $500

Amount raised from the sale of marketable securities = $100,000 – $500 = $99,500

Liquidity from the delay of paying accounts payable = $300,000

Total funding = $99,500+$300,000 = $399,500.

98. Correct answer: C.

C is correct. Bonds are a form of debt that must be adjusted for taxes when calculating the weighted average cost of capital.

A is incorrect because adjustment for taxes is applicable for the cost of debt and not in the cost of equity.

B is incorrect because adjustment for taxes is applicable for the cost of debt and not in the cost of equity.

99. Correct answer: B.

B is correct. The pre-tax cost of debt is the yield to maturity (YTM) of the bond. The bond's YTM can be calculated by solving the following equation for i:

$$864 = \left(\sum_{t=1}^{20} \frac{30}{(1+i)^t}\right) + \frac{1000}{(1+i)^{20}}$$

Using a financial calculator, enter N = 20 (semiannual periods), w = –864, PMT = 30, and FV = 1,000. Compute I/YR. The six-month yield (or calculated I/YR) is 4%. The YTM is obtained by doubling the six-month yield to get 8%. Multiplying the pre-tax cost of debt by (1 – Tax rate) gives the result of 8 × (1 – 0.35) = 5.2%.

A is incorrect. If the after-tax amount of the coupon rate is used, the result will be 0.06(1 – 0.35) = 3.9%.

C is incorrect. If the after-tax cost for six-month yield is used, the result will be 0.04(1 – 0.35) = 2.6%.

100. Correct answer: B.

B is correct. First, determine the yield to maturity, which is the discount rate that sets the bond price to $1,105.94 and is equal to 7%. This calculation can be done with a financial calculator:

FV = –$1,000, PV = $1,105.94, N = 20, PMT = –$80, solve for i, which will equal 7%.

The bond-yield-plus-risk-premium approach is calculated by adding a risk premium to the cost of debt (i.e., the yield to maturity for the debt), making the cost of equity 12.00% (= 7% +5%).

A is incorrect because it uses the after-tax cost of debt: 9.90% = 7% × (1 – 30%) + 5%.

C is incorrect because it uses the coupon rate instead of the yield-to-maturity: 13.00% = 8% + 5%.

101. Correct answer: B.

B is correct because since the company's revenue is growing steadily (20% in the first year and 22% subsequently) and there is already a small amount of debt in the capital structure, this company is most likely in its growth phase. A company in this phase with less than 10% Debt/Capital likely has the capacity to increase debt.

A is incorrect because with volatile revenue growth from a low base and no debt, this is most likely a company in its start-up phase. "At this early stage, debt capital is typically not available."

C is incorrect because with negligible revenue growth and Debt/Capital already greater than 25%, this company is most likely a mature company. Mature companies usually use leverage, but a Debt/Capital ratio of 25% means less ability to increase leverage than a company in its growth phase with less debt outstanding.

102. Correct answer: C.

C is correct because "MM Proposition I without taxes states: The market value of a company is not affected by the capital structure of the company...It demonstrates that managers cannot create firm value simply by changing the company's capital structure. In other words, the value of a company is determined solely by its cash flows, not by its relative reliance on debt and equity capital. Adding leverage increases the risk to equity holders because greater debt increases the probability of bankruptcy. As a result, equity holders will demand a higher return as leverage increases in order to offset the increase in risk. However, overall cost of capital does not change, so there is no change in the value of the company."

A is incorrect because: "MM Proposition I without taxes states: The market value of a company is not affected by the capital structure of the company...It demonstrates that managers cannot create firm value simply by changing the company's capital structure."

B is incorrect because it is related to the Modigliani–Miller Proposition II without taxes (not Proposition I). "MM Proposition II without taxes states: The cost of equity is a linear function of the company's debt-to-equity ratio...It holds that the increase in the cost of equity must exactly offset the greater use of lower cost debt.

103. Correct answer: B.

B is correct because "in general, firms that are in industries with stable cash flows, greater profitability, shorter asset conversion cycles and/or more liquid assets can support more debt and tend to receive higher debt ratings and have lower borrowing costs." Companies operating with low cash flow predictability have lower debt ratings and typically have a lower capacity to service debt.

A is incorrect because companies in stable and defensive sectors typically enjoy strong credit ratings and a higher capacity to service debt. "In general, firms that are in industries with stable cash flows, greater profitability, shorter asset conversion cycles and/or more liquid assets can support more debt and tend to receive higher debt ratings and have lower borrowing costs. Such companies are often in stable and defensive sectors, such as utilities and consumer staples, and enjoy strong market positions."

C is incorrect because companies with a short asset conversion cycle typically enjoy strong credit ratings and a higher capacity to service debt. "In general, firms that are in industries with stable cash flows, greater profitability, shorter asset conversion cycles and/or more liquid assets can support more debt and tend to receive higher debt ratings and have lower borrowing costs."

104. Correct answer: C.

C is correct because "high leverage increases the potential conflict of interest between debtholders and shareholders. At high levels of leverage, the risk–return profile of shareholders becomes more asymmetric. The downside for an equity investor is never more than 100%, or the full value of their investment assuming no leverage or shorting. For highly leveraged companies, the upside reward for shareholders can be multiples of their initial investment. Meanwhile, for a holder of debt to maturity, the return, or upside, remains the face value of debt plus the coupon. However, downside risk for a debtholder increases with higher leverage and the increased probability that the company will be unable to meet its outstanding debt obligations."

A is incorrect because asymmetry increases for both debt and equity holders. "High leverage increases the potential conflict of interest between debtholders and shareholders. At high levels of leverage, the risk–return profile of shareholders becomes more asymmetric. The downside for an equity investor is never more than 100%, or the full value of their investment assuming no leverage or shorting. For highly leveraged companies, the upside reward for shareholders can be multiples of their initial investment. Meanwhile, for a holder of debt to maturity, the return, or upside, remains the face value of debt plus the coupon. However, downside risk for a debtholder increases with higher leverage and the increased probability that the company will be unable to meet its outstanding debt obligations."

B is incorrect because asymmetry increases for both debt and equity holders. "High leverage increases the potential conflict of interest between debtholders and shareholders. At high levels of leverage, the risk–return profile of shareholders becomes more asymmetric. The downside for an equity investor is never more than 100%, or the full value of their investment assuming no leverage or shorting. For highly leveraged companies, the upside reward for shareholders can be multiples of their initial investment. Meanwhile, for a holder of debt to maturity, the return, or upside, remains the face value of debt plus the coupon. However, downside risk for a debtholder increases with higher leverage and the increased probability that the company will be unable to meet its outstanding debt obligations."

105. Correct answer: A.

A is correct.

$$\text{DOL} = \frac{\text{Revenues} - \text{Variable operating costs}}{\text{Revenues} - \text{Variable operating costs} - \text{Fixed operating costs}}$$

$$= \frac{9.8 - 7.2}{9.8 - 7.2 - 1.5} = 2.36$$

B is incorrect because it is Revenues/(Variable operating costs + Fixed operating costs).

C is incorrect because it is (Revenues – Variable operating costs)/Fixed operating costs.

106. Correct answer: A.

A is correct because "business risk is the risk associated with operating earnings."

B is incorrect because "business risk is therefore the combination of sales risk and operating risk."

C is incorrect because "we refer to the uncertainty with respect to the price and quantity of goods and services as sales risk." Also, "business risk is therefore the combination of sales risk and operating risk."

107. Correct answer: B.

B is correct because "Q_{OBE} = F/(P – V)" where F = fixed operating costs; P = price per unit; and V = variable cost per unit. Also, "the 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 operating breakeven number of units = F/(P – V) = \$200,000/\$10 = 20,000 units.

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

C is incorrect because this is the break-even number of units: "Q_{OBE} = (F + C)/(P – V)..." where C = fixed financial costs and other variables are defined in the rationale for the correct answer. Here Q = 1,000,000 and Q(P – V) = \$10,000,000; so (P – V) = \$10. Hence the breakeven number of units = (\$200,000 + \$100,000)/\$10 = 30,000 units.

Questions 108~127 Relate to Equity Investments

108. Correct answer: B.

B is correct. The service that dealers provide is liquidity. Liquidity is the ability to buy or sell with low transaction costs when investors want to trade. By allowing their clients to trade when they want to trade, dealers provide liquidity to them.

A is incorrect. Brokers are agents who fill orders for their clients. They do not trade with their clients.

C is incorrect. Exchanges provide places where traders and dealers can meet to arrange their trades.

109. Correct answer: B.

B is correct because "real assets are tangible properties such as real estate, airplanes, or machinery. Securities, currencies, and contracts are classified as financial assets whereas commodities and real assets [including real estate] are classified as physical assets."

A is incorrect because "commodities include precious metals, energy products, industrial metals, and agricultural products."

C is incorrect because "real assets are tangible properties such as real estate, airplanes, or machinery. Securities, currencies, and contracts are classified as financial assets whereas commodities and real assets [including real estate] are classified as physical assets."

110. Correct answer: B.

B is correct because "the potential gains on a short position are limited to no more than 100 percent whereas the potential losses are unbounded."

A is incorrect because "the potential gains on a short position are limited to no more than 100 percent whereas the potential losses are unbounded." Long positions have potentials of unbounded gains.

C is incorrect because "the potential gains on a short position are limited to no more than 100 percent whereas the potential losses are unbounded."

111. Correct answer: A.

A is correct because "a seasoned security is a security that an issuer has already issued. If the issuer wants to sell additional units of a previously issued security, it makes a seasoned offering (sometimes called a secondary offering)... Trading in the secondary market helps identify the proper price for the seasoned offering."

B is incorrect because "for both types of offerings [underwritten offering and best effort offering], the issuer and the bank usually jointly set the offering price following a negotiation."

C is incorrect because "for both types of offerings [underwritten offering and best effort offering], the issuer and the bank usually jointly set the offering price following a negotiation."

112. Correct answer: B.

B is correct. Reconstitution is the process in which index providers review whether securities are retained, removed, or added. Prior to the index’s reconstitution date, portfolio managers buy stocks they think will be added to an index and sell stocks they think will be deleted from the index, thus dramatically altering the prices of the affected stocks.

A is incorrect because market-capitalization-weighted indexes largely rebalance themselves. An equal-weighted index is one that needs frequent rebalancing.

C is incorrect because reconstitution and rebalancing are both part of index management and create turnover of an index. Besides, reconstitution is a part of the rebalancing cycle.

113. Correct answer: B.

B is correct. The MSCI All Country World Index is a multi-market equity index because it represents stocks of 23 developed and 22 emerging markets.

A is incorrect. The MSCI All Country World Index represents stocks of 23 developed and 22 emerging markets, not a selected market.

C is incorrect. The MSCI All Country World Index is composed of global stocks, but it doesn’t represent specific economic sectors.

114. Correct answer: A.

A is correct. In an efficient market, asset prices reflect new information quickly. Conversely, an inefficient market reflects new information slowly. In a very inefficient market, as implied in this situation, opportunities may exist for active investment strategies (such as those used by active funds) to achieve superior risk-adjusted returns as compared with passive investment strategies (such as those used by equity index funds or passive funds).

B is incorrect. An efficient market is a market in which asset prices reflect new information quickly. Conversely, an inefficient market reflects new information slowly. In a very inefficient market, as implied in this situation, opportunities may exist for active investment strategies (such as those employed by active funds) to achieve superior risk-adjusted returns as compared with passive investment strategies (such as those employed by equity index funds or passive funds).

C is incorrect. An efficient market is a market in which asset prices reflect new information quickly. Conversely, an inefficient market reflects new information slowly. In a very inefficient market, as implied in this situation, opportunities may exist for active investment strategies (such as those employed by active funds) to achieve superior risk-adjusted returns despite higher costs as compared with passive investment strategies (such as those employed by equity index funds or passive funds).

115. Correct answer: C.

C is correct. The value effect—that is, stocks with below-average price-to-earnings and market-to-book ratios and above-average dividend yields have consistently outperformed growth stocks over long periods—is a cross-sectional anomaly.

A is incorrect. A closed-end fund discount is an anomaly where a closed-end fund trades at a discount from its net asset value. It is not a cross-sectional anomaly.

B is incorrect. Overreaction effect is a time-series anomaly, not a cross-sectional anomaly.

116. Correct answer: A.

A is correct. Conservatism is a behavioral bias in which investors tend to be slow to react to new information and continue to maintain their prior views or forecasts.

B is incorrect. If investors focus on issues in isolation and respond to the issues based on how the issues are posed, then they show a behavioral bias called narrow framing.

C is incorrect. If investors assess new information and probabilities of outcomes based on similarity to the current state or to a familiar classification, then they show a behavioral bias called representativeness.

117. Correct answer: B.

B is correct. Participating preference shares do not entitle the shareholders to participate in corporate decisions through voting rights. But they do entitle them to (1) an additional dividend if the company's profits exceed a prespecified level and (2) additional distribution of the company's assets upon liquidation, above the par.

A is incorrect. Participating preference shares entitle the shareholders to participate in additional distribution of the company's assets upon liquidation, above the par.

C is incorrect. Participating preference shares entitle the shareholders to participate in additional dividend if the company's profits exceed a pre-specific level.

118. Correct answer: A.

A is correct. Putable preference shares are less risky than their callable counterparts. They give the investor the option to put the shares back to the company. Because of the lower risk, they will provide a lower expected rate of return. Common shares are the most risky, whether or not they are dividend paying, and are likely to offer the highest expected return.

B is incorrect. Common shares are the most risky, whether or not dividend paying, and are likely to offer the highest expected return. Though these preference shares have non-cumulative dividend feature, preference shareholders will receive priority if the company is liquidated.

C is incorrect. Callable preference shares are more risky than their putable counterparts and so they are likely to offer higher expected returns than putable preference shares.

119. Correct answer: C.

C is correct. In general, a company will utilize share buybacks to satisfy stock compensation plans.

A is incorrect. In most cases, the capital that is raised is used to finance the purchase of long-lived assets, capital expansion projects, research and development, the entry into new product or geographic regions, and the acquisition of other companies.

B is incorrect. The primary goal of raising capital is to finance the company's revenue generating activities in order to increase its net income and maximize the wealth of its shareholders.

120. Correct answer: B.

B is correct. Indexing and passive investing strategies would not engage in over- or underweighting of industries, industry rotation, or timing investments in industries. Therefore, industry analysis is not useful to such investors or portfolio managers.

A is incorrect. In a top-down investing approach, industry analysis is useful to identify industries with positive, neutral, or negative outlooks for profitability and growth, which will then help weighting of industries relative to the benchmark.

C is incorrect. Portfolio performance attribution, which addresses the sources of a portfolio's returns, usually in relation to the portfolio's benchmark, includes industry or sector selection.

121. Correct answer: C.

C is correct. Consumer discretionary companies derive a majority of revenue from the sale of consumer-related products or services for which demand tends to exhibit a relatively high degree of economic sensitivity. A hotel would be an example of a business activity that falls into this category.

A is incorrect. The consumer staples sector includes consumer-related companies whose business tends to exhibit less economic sensitivity than other companies. Examples of business activities that frequently fall into this category are tobacco manufacturers. Tobacco is an example of a consumer staple name whose business is less economically sensitive.

B is incorrect. Biotechnology fits in the health care sector, which does not tend to exhibit a high degree of economic sensitivity.

122. Correct answer: C.

C is correct. The factor that most influences customer purchase decisions is likely to also be the focus of competitive rivalry in the industry. In general, industries in which price is a large factor in customer purchase decisions tend to be more competitive than industries in which customers value other attributes more highly.

A is incorrect. Industries experiencing more intense rivalry among incumbent companies are characterized by undifferentiated products and high exit barriers.

B is incorrect. Industries experiencing more intense rivalry among incumbent companies are fragmented among many small competitors and they tend to have high fixed costs.

123. Correct answer: A.

A is correct. External factors affecting an industry's growth include macroeconomic, technological, demographic, governmental, and social influences. A change in interest rates, or the cost of debt, is an example of a macroeconomic influence on industry growth, profitability, and risk.

C is incorrect. Changes in population size is an example of a demographic influence on industry growth, profitability, and risk.

B is incorrect. Changes in personal spending habits is an example of a social influence on industry growth, profitability, and risk.

124. Correct answer: C.

C is correct. Present value models estimate a security's intrinsic value based on the present value of the future benefits expected to be received from the security.

A is incorrect. Asset-based valuation models estimate the intrinsic value of a common share from the estimated value of assets of a corporation minus the estimated value of its liabilities and preferred shares.

B is incorrect. Multiplier models are based chiefly on share price multiples or enterprise value multiples.

125. Correct answer: A.

A is correct.

Investors' current required return = \$3.75/\$50 = 7.50%

New required return = 7.50% + 0.75% = 8.25%

New market price = \$3.75/0.0825 = \$45.45

B is incorrect. Mistake in computing new return.

Investors' current required return = \$3.75/\$50 = 7.50%

New required return = 7.50% + 0.075 = 7.575%

New market price = \$3.75/0.07575 = \$49.50

C is incorrect. It mistakenly subtracts the increase in the required return.

New required return = 7.50% – 0.75% = 6.75%

New market price = \$3.75/0.0675 = \$55.56

Equity Valuation: Concepts and Basic Tools

126. Correct answer: B.

B is correct. Enterprise value (EV) = EBITDA × EV multiple = 15 × 3.2 = 48.

Market capitalization = EV – Market value (MV) of debt – MV of preferred stock + Cash and short-term investments

= 48 – 10 – 5 + 4.5

= 37.5.

A is incorrect. It subtracts cash and short-term investments instead of adding them.

= 48 – 10 – 5 – 4.5 = 28.5

C is incorrect. It ignores cash and short-term investments.

Enterprise Value (EV) = EBITDA × EV multiple = 15 × 3.2 = 48

Market capitalization = Enterprise value – MV of debt – MV of preferred stock – cash and short-term investments

= 48 – 10 – 5

= 33

127. Correct answer: C.

C is correct. The intrinsic value of an equity security based on the Gordon growth model is estimated as follows:

$$V_0 = \frac{D_0(1+g)}{r-g} = \frac{D_1}{r-g}$$

where:

V_0 = the estimate of the intrinsic value

D_0 = the current dividend (\$5) and D_1 is the next year's dividend

g = the dividend growth rate (4%)

r = the required rate of return (6%)

The estimate of the intrinsic value is:

$$V_0 = \frac{D_0(1+g)}{r-g} = \frac{\$5(1+0.04)}{(0.06-0.04)} = \$260 \text{ per share}$$

Given that the market value ($250) is lower than the estimate of the intrinsic value ($260), a share of the company appears to be undervalued.

B is incorrect. The estimate of the intrinsic value is

$$V_0 = \frac{D_0(1+g)}{r-g} = \frac{\$5(1+0.04)}{(0.06-0.04)} = \$260 \text{ per share}$$

Given that the market value is lower than the estimate of the intrinsic value ($250 < $260), a share of the company appears to be undervalued, not overvalued. A share of a company is overvalued when the market value is higher than the intrinsic value.

A is incorrect. The estimate of the intrinsic value is

$$V_0 = \frac{D_0(1+g)}{r-g} = \frac{\$5(1+0.04)}{(0.06-0.04)} = \$260 \text{ per share}$$

Given that the market value is lower than the estimate of the intrinsic value ($250 < $260), a share of the company appears to be undervalued. A share of a company is fairly valued when the intrinsic value is equal to the market value. Using $5 as D_1, rather than D_0, would lead to the wrong conclusion that a share of the company is fairly valued:

$5/(0.06 – 0.04) = $250 per share

Questions 128~147 Relate to Fixed Income

128. Correct answer: A.

A is correct. A dual currency bond makes coupon payments in one currency and pays the par value at maturity in another currency.

B is incorrect because a currency option bond gives bondholders the right to choose the currency in which they want to receive interest payments and principal repayments.

C is incorrect because a foreign currency bond is issued in foreign currency for both principal and interest payments.

129. Correct answer: A.

A is correct because "negative pledges prevent the issuance of debt that would be senior to or rank in priority ahead of the existing bondholders' debt."

B is incorrect because "restrictions on debt regulate the issue of additional debt. Maximum acceptable debt usage ratios … and minimum acceptable interest coverage ratios are frequently specified, permitting new debt to be issued only when justified by the issuer's financial condition."

C is incorrect because a cross-default clause "specifies that a borrower is considered in default if they default on another debt obligation."

130. Correct answer: C.

C is correct. An FRN with a floor on the coupon rate prevents the coupon rate from falling below a prespecified minimum rate.

A is incorrect because a capped FRN has a cap on the coupon rate that prevents the coupon from rising above a prespecified maximum rate.

B is incorrect because a collared FRN includes both a cap and a floor on the coupon rate.

131. Correct answer: B.

B is correct. Under a shelf registration, the issuer prepares a single, all-encompassing offering circular that describes a range of future bond issuances, all under the same document. This master prospectus can be in place for years before it is replaced or updated, and it can be used to cover multiple bond issuances in the meantime.

A is incorrect because a private placement is a non-underwritten, unregistered offering of bonds that are sold only to an investor or a small group of investors.

C is incorrect because an underwritten offering guarantees the sale of the bond issue at an offering price that is negotiated with the issuer.

132. Correct answer: B.

B is correct. Linkers, also known as inflation-linked bonds, adjust coupon payments, principal payments, or both to protect investors from inflation risk.

A is incorrect because consols are bonds with no maturity (i.e., they are perpetuities).

C is incorrect because floaters are bonds whose coupon rates are tied to a reference rate such as Libor.

133. Correct answer: A.

A is correct. The general formula for the coupon rate of an inverse floater is $C - (L \times R)$, where C is the maximum coupon rate if the reference rate (R) is equal to zero and L is the coupon leverage, which is greater than zero.

B is incorrect. The face value of an inverse floater does not change as the reference rate changes; rather, the coupon rate changes.

C is incorrect. Inverse floaters can have leverage less than 1 (deleveraged inverse floaters), so the coupon rate changes by less than the change in the reference rate; leverage greater than 1 (leveraged inverse floaters), so the coupon rate changes by more than the change in the reference rate; or leverage equal to 1, so the coupon rate changes by the same amount as the change in the reference rate.

134. Correct answer: B.

B is correct. A security with 19 semiannual payments of \$3 interest and a 20th payment of \$103 (interest plus return of face value) with a semiannual discount rate of 3.5% is computed as:

$$\mathrm{P} = \frac{3}{1.035^1} + \frac{3}{1.035^2} + \frac{3}{1.035^3} + \cdots + \frac{3}{1.035^{19}} + \frac{103}{1.035^{20}} = 92.89$$

A is incorrect because it is equal to \$106/1.07.

C is incorrect because it reverses the coupon rate and the discount rate.

135. Correct answer: A.

A is correct. The value of the bond is

$$\frac{1}{1.002^1}+\frac{1}{1.004^2}+\frac{1}{1.005^3}+\frac{1}{1.0055^4}+\frac{101}{1.006^5}$$
$$= 0.9980 + 0.9920 + 0.9851 + 0.9783 + 98.0238 = 101.98$$

B is incorrect because it discounts all cash flows at the 2.5-spot rate and uses the annual coupon rate instead of the semi-annual:

$$\frac{2}{1.006^1}+\frac{2}{1.006^2}+\frac{2}{1.006^3}+\frac{2}{1.006^4}+\frac{102}{1.006^5}$$
$$= 1.9881 + 1.9762 + 1.9644 + 1.9527 + 98.9943 = 106.88$$

C is incorrect because it fails to divide the spot rates by 2 as required because they are presented on a bond-equivalent yield basis:

$$\frac{1}{1.004^1}+\frac{1}{1.008^2}+\frac{1}{1.01^3}+\frac{1}{1.011^4}+\frac{101}{1.012^5}$$
$$= 0.9960 + 0.9842 + 0.9706 + 0.9572 + 95.1522 = 99.06$$

136. Correct answer: C.

C is correct. Current yield is calculated as ($4.5/$85.70) = 5.25%.

A is incorrect because it is the coupon of the bond.

B is incorrect because it is calculated as follows:

100 – 85.70 = 14.30

14.30/10 = 1.43.

4.5 + 1.43 = 5.93

137. Correct answer: A.

A is correct. By applying inputs to the formula for a forward rate calculation,

$$\left(1+\frac{0.0467}{2}\right)^8 \times \left(1+IFR_{8,2}\right)^2 = \left(1+\frac{0.0535}{2}\right)^{10}$$
$$IFR_{8,2} = 0.04046$$

Applying a factor of 2 annualizes for a periodicity of 2, for a forward rate of 8.092%.

B is incorrect because it uses the following formula without considering the semiannual bond basis:

$$[(1 + 0.0535)^5/(1 + 0.0467)^4] - 1 = 8.114\%.$$

C is incorrect because it does not apply an annualized factor for a period of two.

138. Correct answer: C.

C is correct. The use of letters of credit is a type of external credit enhancement used in a securitization.

A is incorrect because subordination is a type of internal credit enhancement used in a securitization.

B is incorrect because overcollateralization is a type of internal credit enhancement used in a securitization.

139. Correct answer: B.

B is correct. Many commercial loans backing commercial mortgage-backed securities (CMBS) are balloon loans that require significant repayment of principal at maturity. The risk that the borrower will not be able to make the balloon payment is called balloon risk. The lender may decide to extend the loan over a period of time called the workout period. Because the term of the loan can be extended, balloon risk is a type of extension risk.

A is incorrect because shorter-term tranches in a CMO structure have less extension risk than longer-term tranches.

C is incorrect because planned amortization class tranches in a CMO structure offer investors reduction in both extension and contraction risk.

140. Correct answer: C.

C is correct. Credit card receivable-backed securities are non-amortizing loans. They have a lockout period during which the only cash flows paid to investors are based on finance charges and fees. When the lockout period is over, principal payments are distributed to investors. In contrast, principal is received monthly in automobile loan-backed securities.

A is incorrect because with credit card receivable-backed securities principal payments are not distributed to investors as a balloon payment. After the lockout period, the principal received is distributed as part of the periodic payments made to investors.

B is incorrect because for credit card receivable-backed securities, principal received during the lockout period is reinvested in additional credit card receivables. After the lockout period, principal payments are used to pay off the outstanding principal.

141. Correct answer: A.

A is correct. Effective duration is a type of curve duration that measures the sensitivity of the bond price with respect to a benchmark yield curve.

B is incorrect because modified duration is a type of yield duration (as opposed to curve duration), which measures the sensitivity of a bond's price to a change in its own yield to maturity (not the benchmark yield curve).

C is incorrect because the price value of a basis point is a type of yield duration (as opposed to curve duration), which measures the sensitivity of a bond's price to a change in its own yield to maturity (not the benchmark yield curve).

142. Correct answer: C.

C is correct. The PVBP is an estimate of the change in the full price of a bond given a 1 basis point increase and a 1 basis point decrease in the yield to maturity.

A is incorrect because the PVBP is an estimate of the change in the full price of a bond given a 1 basis point increase and a 1 basis point decrease (not just a 1 basis point decrease) in the yield to maturity.

B is incorrect because the PVBP is an estimate of the change in the full price of a bond given a 1 basis point increase and a 1 basis point decrease (not just a 1 basis point increase) in the yield to maturity.

143. Correct answer: A.

A is correct. The duration of a portfolio is the weighted average of the bonds' durations in which the weight for each bond is its contribution to the portfolio's value, or $w_{bond} = Value_{bond}/Value_{portfolio}$ and $Duration_{portfolio} = \Sigma w_{bond} \times Duration_{bond}$. In this case, value of the portfolio is 1.2 + 3.4 + 2.9 + 1.6 = 9.1 million, and the portfolio duration equals (1.2/9.1 × 3.2) + (3.4/9.1 × 7.6) + (2.9/9.1 × 12.4) + (1.6/9.1 × 1.5) = 0.4220 + 2.8396 + 3.9516 + 0.2637 = 7.48.

B is incorrect because it is the median of the bonds' durations.

C is incorrect because it is the arithmetic mean (average) of the bonds' durations.

144. Correct answer: B.

B is correct. The duration gap is a bond's Macaulay duration minus the investment horizon. A positive duration gap indicates that the investor currently is at risk of higher interest rates.

A is incorrect because a negative (not positive) duration gap indicates that the investor is at risk of lower interest rates.

C is incorrect because a duration gap of zero (not a positive duration gap) indicates that the bond investor currently is hedged against interest rate risk.

145. Correct answer: A.

A is correct. The size of the spread between the bid price and the ask price is the primary measure of market liquidity of the issue. Market liquidity risk is the risk that the investor will have to sell a bond below its indicated value. The wider the bid–ask spread, the greater the market liquidity risk.

B is incorrect because spread risk is the risk that spreads widen.

C is incorrect because default risk is the risk the borrower defaults.

146. Correct answer: C.

C is correct. Issuing subordinated debt is costlier than issuing secured debt because of the increased credit risk inherent in its lower priority of claims.

A is incorrect. Issuing subordinated debt is less expensive than issuing equity because debtholders require a lower return than equityholders require. Debtholders have a higher priority of claim in the event of default, which is why they accept a lower return on investment.

B is incorrect. Subordinated debt is typically less restrictive than senior debt.

147. Correct answer: A.

A is correct. Negative covenants, also known as restrictive covenants, limit what a company can do. In this case, the company is limited to a dividend ratio of 25%.

B is incorrect. Affirmative covenants spell out what the company is obligated to do. In this case, the company is obligated to maintain a debt-to-EBITDA ratio of 4.0 or less.

C is incorrect. Affirmative covenants spell out what the company is obligated to do. In this case, the company is obligated to redeem outstanding debt in the event of a takeover.

Questions 148~158 Relate to Derivatives

148. Correct answer: A.

A is correct because "forwards, futures, and swaps start off with values of zero... and swap price is the fixed price or rate at which the underlying will be purchased at a later date." The value of a swap is zero at contract initiation.

B is incorrect because "the forward, futures, or swap price is a concept that represents the fixed price or rate at which the underlying will be purchased at a later date." The value of a swap includes all payments, fixed and floating - not just fixed payments.

C is incorrect because "the value and price of a swap are not at all comparable with each other." The above number is a price figure and hence not at all comparable with the value of a swap.

149. Correct answer: A.

A is correct. A futures contract is classified as a forward commitment in which the buyer undertakes to purchase the underlying asset from the seller at a later date and at a price agreed on by the two parties when the contract is initiated.

B is incorrect. A call option contract is a contingent claim in which the buyer of the option has a right to purchase the underlying asset at a fixed price on or before a pre-specified expiration date.

C is incorrect. A credit default swap is a contingent claim in which the credit protection seller provides protection to the credit protection buyer against the credit risk of a third party.

150. Correct answer: C.

C is correct. In a currency swap, the underlying principal is denominated in different currencies and is typically exchanged at the start and end of the swap.

A is incorrect. In a currency swap, the underlying principal is denominated in different currencies and would typically be exchanged not only at the start of the swap but also at the end of the swap.

B is incorrect. In a currency swap, the underlying principal is denominated in different currencies and would typically be exchanged not just at the end of the swap but at the start of the swap as well.

151. Correct answer: B.

B is correct. Only the short can default. This scenario occurs when the long exercises the option and the short fails to fulfill its obligation under the contract.

A is incorrect. Only the short can default. Beyond the initial payment of the premium, there is no further obligation for the long.

C is incorrect. Beyond the initial payment of the premium, there is no further obligation for the long.

152. Correct answer: B.

B is correct. Derivatives markets provide the benefit of low capital requirements to hedgers and speculators.

A is incorrect. Derivatives markets provide the benefit of low transaction costs to hedgers and speculators.

C is incorrect. Derivatives markets provide the benefit of ease of short selling to hedgers and speculators.

153. Correct answer: B.

B is correct. At initiation, value is equal to zero. Price is a positive number that states the amount that must be paid when the purchase takes place.

A is incorrect. Value is zero; price is a positive number.

C is incorrect. Value is zero; price is a positive number.

154. Correct answer: B.

B is correct. The value of a long position in a forward contract at expiration is defined as spot price of the underlying minus forward price agreed in the contract.

A is incorrect. This is the value of a short position.

C is incorrect. The value of a long position in a forward contract does not depend on the value of the forward at initiation.

155. Correct answer: B.

B is correct. Convenience yield represents the nonmonetary advantage of holding the asset.

A is incorrect. Convenience yield is a benefit for the holder of the asset and not the holder of an option contract.

C is incorrect. Convenience yield is a benefit for the holder of the asset and not the holder of a forward contract.

156. Correct answer: A.

A is correct. The price of the swap is the fixed rate on the swap at the start of the transaction such that the present value of fixed payments is equal to the present value of the floating payments and the market value of the swap is zero.

B and C are incorrect. These calculations provide the market value of the swap to one of the parties.

157. Correct answer: C.

C is correct. A European call option is in the money when the value of the underlying is greater than the exercise price of the option.

A is incorrect. A European call option is at the money when the value of the underlying is equal to the exercise price of the option.

B is incorrect. A European call option is out of the money when the value of the underlying is less than the exercise price of the option.

158. Correct answer: A.

A is correct. The put–call–forward parity relationship states that

$$\frac{\mathrm{F}_0(T)}{(1+r)^t} + p_0 = c_0 + \frac{x}{(1+r)^t}$$

That is,

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

Rearranging terms gives

Long put = Long call + Long risk-free bond + Short forward.

B and C are incorrect. Long put = Long call + Long risk-free bond + Short forward.

Questions 159~169 Relate to Alternative Investments

159. Correct answer: A.

A is correct. Alternative investments are likely to be less transparent than traditional investments. "Alternative investments often have many of the following characteristics:

- Narrow specialization of the investment managers
- Relatively low correlation of returns with those of traditional investments
- Less regulation and less transparency than traditional investments... "

B is incorrect because alternative investments are likely to be less efficiently priced than traditional investments. "The 2019 annual report for the Yale University endowment provides one institutional investor's reasoning behind the attractiveness of investing in alternatives:

The heavy [75.2%] allocation to nontraditional asset classes stems from the diversifying power they provide to the portfolio as a whole. Alternative assets, by their very nature, tend to be less efficiently priced than traditional marketable securities, providing an opportunity to exploit market inefficiencies through active management. Today's portfolio has significantly higher expected returns and lower volatility than the 1989 portfolio.

This quote neatly illustrates the expected characteristics of alternative investments: diversifying power (low correlations between returns), higher expected returns (positive absolute return), and illiquid and potentially less
efficient markets.

C is incorrect because alternative investments are likely to be subject to less regulation than traditional investments. "Alternative investments often have many of the following characteristics:

- Narrow specialization of the investment managers
- Relatively low correlation of returns with those of traditional investments
- Less regulation and less transparency than traditional investments..."

160. Correct answer: A.

A is correct. A private equity manager is compensated through a management fee based on committed capital plus an incentive fee.

B is incorrect. The management fee of a hedge fund is based on assets under management.

C is incorrect. The fee structure for mutual funds usually includes only a management fee, not an incentive fee.

161. Correct answer: B.

B is correct. Funds of funds have a multilayered fee structure that will reduce the returns to the investor.

A is incorrect because one advantage of fund of funds is that they usually have a high level of due diligence expertise.

C is incorrect because another advantage of fund of funds is their ability to negotiate better redemption terms such as shorter lockup and notice periods.

162. Correct answer: A.

A is correct. Mezzanine debt is riskier than senior direct lending and infrastructure debt. "As a junior form of subordinated debt, mezzanine private debt private debt offers higher growth potential, equity upside, and higher risk, with the comparatively highest returns. Infrastructure debt is senior and poses the lowest risk."

B is incorrect because "infrastructure debt is senior and poses the lowest risk. Unitranche debt is less risky than subordinated debt but riskier than infrastructure debt and is a blend of secured and unsecured debt."

C is incorrect because senior direct lending is less risky than mezzanine debt.

163. Correct answer: A.

A is correct. When a commodity market is in contango, futures prices are higher than spot prices. When spot prices are higher than the futures price, the market is said to be in backwardation.

B is incorrect because backwardation is the opposite of contango; the futures price is below the spot price.

C is incorrect because carry refers to storage plus interest costs. It does not say anything about futures prices relative to spot prices.

164. Correct answer: B.

B is correct. Real estate investment trusts are publicly traded and thus provide liquidity.

A is incorrect. Hedge funds may have long lockup periods.

C is incorrect. Private equity funds may have long lockup periods.

165. Correct answer: A.

A is correct. "Infrastructure investments may also be categorized by the underlying asset's stage of development. Investing in infrastructure assets that are to be constructed is generally referred to as **greenfield investment**. The intent may be to lease or sell the assets to the government after construction or to either hold and operate the assets over the long term or hold and operate them for a shorter period until operational maturity and then sell them to new investors, thus ensuring capital appreciation that reflects the construction and commissioning risk."

B is incorrect because "investing in existing infrastructure assets may be referred to as **brownfield investment**. Perhaps the assets are owned by a government that wants to privatize them, lease them out, or sell them and lease them back; or they may be owned by greenfield investors seeking to realize the value of their investment through a sale."

C is incorrect because an economic infrastructure asset supports economic activity and includes such assets as transportation and utility assets. Correctional facilities are social infrastructure assets, which are focused on human activities. "Social infrastructure assets are directed toward human activities and include such assets as educational, health care, social housing, and correctional facilities, with the focus on providing, operating, and maintaining the asset infrastructure."

166. Correct answer: A.

A is correct. The Treynor ratio "is a measure of the excess average return of an investment relative to its beta to a relevant benchmark, such as a broad equity index." "Treynor ratio uses beta as a risk measure."

B is incorrect because "both Sharpe Ratio and Sortino Ratio use standard deviation as a risk measure. Treynor ratio uses beta as a risk measure." "The denominator for the Sharpe ratio is standard deviation of returns, and the denominator for the Sortino ratio is downside deviation of returns".

C is incorrect because "both Sharpe Ratio and Sortino Ratio use standard deviation as a risk measure. Treynor ratio uses beta as a risk measure." "The denominator for the Sharpe ratio is standard deviation of returns, and the 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."

167. Correct answer: C.

C is correct. It calculated the incentive fee based on the Investment B's profit of $30 million under an American-style deal-by-deal waterfall, and correctly excluded Investment A which incurred a loss. Total incentive fee payable = Incentive fee of Investment B = $30 million × 20% = $6 million.

A is incorrect because it calculated the incentive fee based on the total loss of –$20 million. Note that under a European-style whole-of-fund waterfall, while the incentive fee is calculated on the total profit/loss of the fund, the minimum incentive fee would be $0 instead of –$20 million × 20% = –$4 million.

B is incorrect because it calculated the incentive fee based on the total loss of –$20 million under a European-style whole-of-fund waterfall instead of an American-style deal-by-deal waterfall. Consequently, total incentive fee payable = MAX [$0, –$4 million] = $0. Note that while the incentive fee is calculated on the total profit/loss of the fund, the minimum incentive fee is $0 instead of –$20 million × 20% = –$4 million.

168. Correct answer: A.

A is correct. The Sharpe ratio and the safety-first measure use standard deviation as the measure of risk, which ignores the negative skewness in returns. The Sortino ratio uses the downside deviation as the measure of risk, which will reflect negative skewness if present.

B is incorrect because the Sharpe ratio does not reflect negative skewness if present.

C is incorrect because the safety-first measure does not reflect negative skewness if present.

169. Correct answer: A.

A is correct. The $120 million grows by 25% to $150 million [= $120 million × (1 + 0.25)]. The management fee is \$2.25 million (= \$150 million × 0.015), leaving \$147.75 million, net of the management fee, or an increase of \$27.75 million over the beginning value of \$120 million. The 6% hurdle rate requires an increase of \$7.2 million (= \$120 million × 0.06), so the fund has earned \$20.55 million (= \$27.75 million – \$7.2 million) over the hurdle rate, net of the management fee. The incentive fee is 15% of this, or \$3.0825 million (= \$20.55 million × 0.015), leaving an increase in fund assets, net of management and incentive fees, of \$24.6675 million (= \$27.75 million – \$3.0825 million). The investors' return, net of fees, is \$24.6675/\$120 million = 20.56%.

C is incorrect because it fails to adjust for the hurdle rate when calculating the incentive fee or 0.15 × \$27.75 million = \$4.1625 million and \$27.75 million – \$4.1625 million = \$23.5875 million. \$23.5875 million/\$120 million = 19.66%.

B is incorrect because it ignores that management fee. The fund grows to \$150 million.

Incentive fee is (\$150 million – \$120 million) × 0.15 = \$4.5 million

\$150 million – \$120 million – \$4.5 million = \$25.5 million

\$25.5 million/\$120 million = 0.2125

Questions 170~180 Relate to Portfolio Management

170. Correct answer: B.

B is correct. Asset allocation is part of the execution step of the portfolio management process. The execution step also includes security analysis and portfolio construction.

A is incorrect. Portfolio monitoring is part of the feedback step of the portfolio management process.

C is incorrect. Preparation of an investment policy statement is part of the planning step of the portfolio management process.

171. Correct answer: C.

C is correct. A defined-benefit pension plan defines the future benefit that an employer has the obligation to pay in terms of the retirement income benefits owed to participants.

A is incorrect because university endowments are established to provide continuing financial support to a university and its students.

B is incorrect because in a defined-contribution pension plan contributions rather than benefits are specified.

172. Correct answer: C.

C is correct.

$$Cov_{i,j} = \rho_{i,j}\sigma_i\sigma_j = 0.0625^{1/2} \times 0.090^{1/2} \times 0.450 = 0.0338$$

A is incorrect because $Cov_{i,j} = \rho_{i,j}\sigma_i\sigma_j = 0.0625 \times 0.090 \times 0.450 = 0.0025$ (the variances are used instead of the standard deviations).

B is incorrect because $Cov_{i,j} = \rho_{i,j}\sigma_i\sigma_j = 2 \times 0.0625^{1/2} \times 0.090^{1/2} \times 0.450 = 0.0675$ (the covariance is multiplied by 2).

173. Correct answer: A.

A is correct. Risk-seeking investors, which are those who are willing to take higher risks for a higher expected return, will invest more than 100% in the optimal risky portfolio by borrowing at the risk-free rate. This portfolio lies to the right point of the optimal risky portfolio on the CAL.

B is incorrect because it has lower risks than borrowing and investing more than 100% to the optimal risky portfolio.

C is incorrect because the investor who invests only to the risk-free assets has the lowest risk appetite.

174. Correct answer: A.

A is correct. One of the assumptions of the CAPM is that investors plan for the same single holding period.

B is incorrect because one of the assumptions of the CAPM is that all investments are infinitely divisible, which means an investor can invest as much as he or she desires in any asset.

C is incorrect because one of the assumptions of the CAPM is that investors are price takers, which implies that investor trades will not affect prices.

175. Correct answer: B.

B is correct. Jensen's alpha = 0.12 – [0.027 + 1.5(0.075 – 0.027)] = 0.021, or 2.10%.

A is incorrect. This is calculated by subtracting the market return from the portfolio return: 0.12 – 0.75 = 0.045 or 4.5%.

C is incorrect. This is calculated without the inclusion of the risk-free return: 0.12 – 1.5(0.075) = 0.0075 or 0.75%.

176. Correct answer: B.

B is correct. Tactical asset allocation is the decision to deliberately deviate from the policy exposures to systematic risk factors with the intent to add value based on forecasts of the near-term returns of those asset classes.

A is incorrect. Rebalancing is the process of returning to the strategic asset allocation.

C is incorrect. Strategic asset allocation is the set of exposures to IPS-permissible asset classes that is expected to achieve the client's long-term objectives given the client's investment constraints.

177. Correct answer: A.

A is correct because "**availability bias** is an information-processing bias in which people estimate the probability of an outcome or the importance of a phenomenon based on how easily information is recalled."

B is incorrect because "**confirmation bias** refers to the tendency to look for and notice what confirms prior beliefs and to ignore or undervalue whatever contradicts them." Thus, confirmation bias is not stemming from the lack of availability of information.

C is incorrect because "in **illusion of control bias**, people tend to believe that they can control or influence outcomes when, in fact, they cannot," which is not the case in the stem.

178. Correct answer: A.

A is correct. Tax risk, the risk that the tax code could change, along with regulatory and accounting risks together form compliance risk. Legal risk is the risk of being sued or the risk that a court will not uphold an agreement. Model risk is the risk of using the wrong model for analysis or the risk of using the right model incorrectly.

B is incorrect because model risk is the risk of using the wrong model for analysis or the risk of using the right model incorrectly.

C is incorrect because legal risk is the risk of being sued or the risk that a court will not uphold an agreement.

179. Correct answer: B.

B is correct. Price target = Neckline − (Head − Neckline). In this example, Price target = $65.75 − ($83.50 − $65.75) = $65.75 − $17.75 = $48.00.

A is incorrect because 59.50 = Neckline − (Shoulder − Neckline) = 65.75 − (72 − 65.75).

C is incorrect because 44.50 = Current Price − (Head − Current Price) = 64 − (83.50 − 64).

180. Correct answer: B.

B is correct. Product reviews would most likely come from individual sources.

A is incorrect. Data from sensors would most likely be generated by satellites, geolocation, and connected devices and would not include product reviews.

C is incorrect. Data from business processes would most likely be transactional or corporate in nature.