Solution

A. Incorrect because according to Standard VII (B), Reference to CFA Institute, the CFA Designation, and the CFA Program, Brown violated the Standards by directly implying that superior performance can be expected of someone with the CFA designation.

B. **Correct** because according to Standard VII (B), Reference to CFA Institute, the CFA Designation, and the CFA Program, Brown violated the Standards by directly implying that superior performance in trade execution can be expected of someone with the CFA designation. Statements referring to CFA Institute, the CFA designation, or the CFA Program that overstate the competency of an individual or imply, either directly or indirectly, that superior performance can be expected from someone with the CFA designation are not allowed under the standard.

C. Incorrect because according to Standard VII (B), Reference to CFA Institute, the CFA Designation, and the CFA Program, the second statement is allowed. member may state that all principals passed the three examinations on the first try as long as this statement is true, but it must not be linked to performance or imply superior ability.

Guidance for Standards I–VII

- demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity

Solution

A. Incorrect because according to Standard III (A), Loyalty, Prudence and Care, the member is in violation as the proxy voting policies should be disclosed to the clients not only upon request, as described in the response rationale for the correct answer.

B. **Correct** because according to Standard III (A), Loyalty, Prudence and Care, part of a member's or candidate's duty of loyalty includes voting proxies in an informed and responsible manner. Proxies have economic value to a client, and members and candidates must ensure that they properly safeguard and maximize this value. An investment manager who fails to vote, casts a vote without considering the impact of the question, or votes blindly with management on nonroutine governance issues (e.g., a change in company capitalization) may violate this standard. Voting of proxies is an integral part of the management of investments. A cost–benefit analysis may show that voting all proxies may not benefit the client, so voting proxies may not be necessary in all instances. Members and candidates should disclose to clients their proxy voting policies. Therefore members should disclose their proxy voting policies to clients, not only upon request.

C. Incorrect because according to Standard III (A), Loyalty, Prudence and Care, voting proxies may not be necessary in all instances, as described in the response rationale for the correct answer.

Guidance for Standards I–VII

- demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity

Solution

A. Incorrect because according to Standard IV (C), Responsibilities of Supervisors, once a violation is discovered, a supervisor should increase supervision or place appropriate limitations on the wrongdoer pending the outcome of the investigation.

B. Correct because according to Standard IV (C), Responsibilities of Supervisors, once a supervisor learns that an employee has violated or may have violated the law or the Code and Standards, the supervisor must promptly initiate an assessment to determine the extent of the wrongdoing. Relying on an employee's statements about the extent of the violation or assurances that the wrongdoing will not reoccur is not enough. Reporting the misconduct up the chain of command and warning the employee to cease the activity are also not enough. Pending the outcome of the investigation, a supervisor should take steps to ensure that the violation will not be repeated, such as placing limits on the employee's activities or increasing the monitoring of the employee's activities.

C. Incorrect because according to Standard IV (C), Responsibilities of Supervisors, Relying on an employee's statements about the extent of the violation or assurances that the wrongdoing will not reoccur is not enough.

Guidance for Standards I–VII

- demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity

Solution

A. Correct because the GIPS standards requirements for the fundamentals of compliance include that the GIPS standards must be applied on a FIRM-wide basis. Compliance cannot be achieved on a single product or composite.

B. Incorrect because the GIPS standards requirements for the fundamentals of compliance include that, if firms do not meet all the requirements of the GIPS standards, firms must not represent or state that "it is in compliance with the GIPS standards except for" or make any other statements that may indicate partial compliance with the GIPS standards.

C. Incorrect because the GIPS standards prohibits statements referring to the calculation methodology as being in accordance, in compliance, or consistent with the Global Investment Performance Standards.

Introduction to the Global Investment Performance Standards (GIPS)

- describe the fundamentals of compliance, including the recommendations of the GIPS standards with respect to the definition of the firm and the firm's definition of discretion

Solution

A. Incorrect because Jayson violated Standard I (A), Knowledge of the Law, as in the response rationale for the correct answer.

B. Incorrect because Standard III (B), Fair Dealing, requires that Members and Candidates must deal fairly and objectively with all clients when providing investment analysis, making investment recommendations, taking investment action, or engaging in other professional activities. In this case, nothing was done to discriminate clients.

C. **Correct** because according to Standard I (A), Knowledge of the Law, When applicable law and the Code and Standards require different conduct, members and candidates must follow the more strict of the applicable law or the Code and Standards. According to Standard III (E), Preservation of Confidentiality, Members and Candidates must keep information about current, former, and prospective clients confidential. In this case, the Code and Standards were stricter so Jayson must not have revealed her former client's e-mail address.

Guidance for Standards I–VII

- demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity

Solution

A. Incorrect as described in the response rationale of the correct answer.

B. Incorrect as described in the response rationale of the correct answer.

C. **Correct** because according to the Standard V(C), record retention, Members and candidates must retain records that substantiate the scope of their research and reasons for their actions or conclusions. The retention requirement applies to decisions to buy or sell a security as well as reviews undertaken that do not lead to a change in position. An example of supporting documentation that assists the member or candidate in meeting the requirements for retention are outside research reports.

Ethics Application

- explain how the practices, policies, and conduct do or do not violate the CFA Institute Code of Ethics and Standards of Professional Conduct

Solution

A. Incorrect because according according to Standard V (A), Diligence and Reasonable Basis, Dowling does not need to decline to be identified with the report, as long as he believes the research has a reasonable and adequate basis.

B. Incorrect because according according to Standard V (A), Diligence and Reasonable Basis, Dowling may accept the group decision as long as he believes the research is sound and there is no requirement that he make an effort to have the report reflect his opinion.

C. **Correct** because according to Standard V (A), Diligence and Reasonable Basis, if a member believes that the consensus opinion has a reasonable and adequate basis and is independent and objective, the member or candidate need not decline to be identified with the report. If the member or candidate is confident in the process, the member or candidate does not need to dissociate from the report even if it does not reflect his or her opinion. Thus, Dowling may accept the group's decision and may be identified with the report as long as it has a reasonable basis.

Guidance for Standards I–VII

- demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity

Solution

A. Correct because according to Standard III(E), Preservation of Confidentiality, if applicable law requires members to maintain confidentiality, even if the information concerns illegal activities on the part of the client, members and candidates should not disclose such information.

B. Incorrect because Standard III(E), Preservation of Confidentiality, protects the confidentiality of client information even if the person or entity is no longer a client of the member or candidate. Therefore, members and candidates must continue to maintain the confidentiality of client records even after the client relationship has ended. Therefore, a member is not permitted to share information relating to former clients.

C. Incorrect because according to Standard III(E), Preservation of Confidentiality, when permissible under applicable law, members and candidates shall consider the PCP an extension of themselves when requested to provide information about a client in support of a PCP investigation into their own conduct. Therefore, a member can provide information to the PCP only if permissible under applicable law.

Guidance for Standards I–VII

- identify conduct that conforms to the Code and Standards and conduct that violates the Code and Standards

Solution

A. Incorrect because according to Standard III(B), Fair Dealing, research should be disseminated to clients fairly, not selectively. Simply because the research is in draft form it does not exempt it from being disseminated fairly.

B. Incorrect because even though the research may benefit from the additional reviews, this practice favors clients who receive the research before others and as a result, the analyst has not treated clients fairly as required by Standard III(B), Fair Dealing.

C. **Correct** because the analyst does not violate any of the Standards of Professional Conduct by having long-standing client relationships and generally is not required to disclose such relationships. However, the analyst is not treating all clients fairly as required by Standard III(B), Fair Dealing, when disseminating investment recommendations.

Guidance for Standards I–VII

- recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct

Solution

A. Correct because Standard II(B), Market Manipulation, precludes transaction-based manipulation such as attempting to buy and sell the stock using the accounts in hopes of raising the trading volume and the price. So, Action 1 violates the Standard. Also, the Standard precludes other transaction-based manipulation such as securing a controlling, dominant position in a financial instrument to exploit and manipulate the price of a related derivative and/or the underlying asset. So, Action 2 also violates the Standard.

B. Incorrect because Standard II(B), Market Manipulation, precludes transaction-based manipulation such as attempting to buy and sell the stock using the accounts in hopes of raising the trading volume and the price. Action 1 violates the Standard. However, the Standard is not intended to preclude transactions undertaken on legitimate trading strategies based on perceived market inefficiencies. So, Action 3 does not violate the Standard.

C. Incorrect because Standard II(B), Market Manipulation, precludes other transaction-based manipulation such as securing a controlling, dominant position in a financial instrument to exploit and manipulate the price of a related derivative and/or the underlying asset. Action 2 violates the Standard. However, the Standard is not intended to preclude transactions undertaken on legitimate trading strategies based on perceived market inefficiencies. So, Action 3 does not violate the Standard.

Guidance for Standards I–VII

- demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity

Solution

A. Incorrect because according to Standard VI(A), Disclosure of Conflicts, members and Candidates must make full and fair disclosure of all matters that could reasonably be expected to impair their independence and objectivity or interfere with respective duties to their clients, prospective clients, and employer. Members and Candidates must ensure that such disclosures are prominent, are delivered in plain language, and communicate the relevant information effectively. Chan should treat her sister's fee-paying account like any other firm account and should not be disadvantaged. It does not have potential conflict. Therefore, Lau has not violated Standard VI(A).

B. Correct because according to Standard VI(B), Priority of Transactions, family accounts that are client accounts should be treated like any other firm account and should neither be given special treatment nor be disadvantaged because of the family relationship. Chan should treat her sister's fee-paying account like any other firm account and should not be disadvantaged. Therefore, Lau has violated Standard VI(B).

C. Incorrect because according to Standard V(A), Diligence and Reasonable Basis, even though an investment recommendation may be well informed, downside risk remains for any investment. Members and candidates can base their decisions only on the information available at the time decisions are made. The steps taken in developing a diligent and reasonable recommendation should minimize unexpected downside events. Chan does comprehensive research and therefore she has not violated Standard V(A).

Guidance for Standards I–VII

- demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity

Solution

A. Incorrect because the CFA institute encourages, but does not require, charterholders to engage in their professional communities.

B. **Correct** because the advocacy efforts of CFA Institute aim to build market integrity by calling for regulations that align the interests of firms and clients.

C. Incorrect because CFA Institute promotes for the ultimate benefit of society. The mission of CFA Institute is “to lead the investment profession globally, by promoting the highest standards of ethics, education, and professional excellence for the ultimate benefit of society."

Ethics and Trust in the Investment Profession

- describe the need for high ethical standards in investment management

Solution

A. Correct because verification may also increase the knowledge of the firm's performance measurement team and improve the consistency and quality of the firm's GIPS standards-related performance information. Therefore, Statement 1 is accurate.

B. Incorrect because verification is performed with respect to an entire firm, not on specific composites or pooled funds. Verification does not ensure the accuracy of any specific performance report. Therefore, Statement 2 is not accurate.

C. Incorrect because verification is performed with respect to an entire firm, not on specific composites or pooled funds. Verification does not ensure the accuracy of any specific performance report. Therefore, Statement 2 is not accurate.

Introduction to the Global Investment Performance Standards (GIPS)

- describe the concept of independent verification

Solution

A. Incorrect because when in possession of material nonpublic information, Standard II(A), Material Nonpublic Information, requires personal trading to be suspended.

B. Incorrect because when in possession of material nonpublic information, according to Standard II(A), Material Nonpublic Information, it is prudent to suspend arbitrage trading to prevent profits from insider trading.

C. **Correct** because according to Standard II(A), Material Nonpublic Information, Recommended Procedures for Compliance, if Merchant stopped market making, a form of proprietary trading, due to being in possession of material nonpublic information, it could tip off investors that Vital is likely to be making a major announcement in the near future. This would be counterproductive to the goals of maintaining the confidentiality of information and providing market liquidity. The Standard recommends that market makers remain passive when in possession of material nonpublic information. The Standard also requires personal trading to be suspended when in possession of material nonpublic information, and it is prudent to suspend arbitrage trading to prevent profits from insider trading.

Guidance for Standards I–VII

- recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct

Solution

A. Incorrect because either gross or net of fee performance may be disclosed.

B. Incorrect because the use of simulated results is permitted as long as it is disclosed.

C. **Correct** because in order to meet their obligations under Standard III(D), Performance Presentation, members should present the performance of the weighted composite of similar portfolios rather than using a single representative or all accounts.

Guidance for Standards I–VII

- recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct

Solution

A. Incorrect because according to Standard III (C), Suitability, an appropriate suitability determination will not, however, prevent some investments or investment actions from losing value.

B. **Correct** because according to Standard III (C), Suitability, members must judge the suitability of investments in the context of the client's total portfolio.

C. Incorrect because according to Standard III (C), Suitability, not every investment opportunity will be suitable for every portfolio, regardless of the potential return being offered.

Guidance for Standards I–VII

- recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct

Solution

A. Incorrect because according to Standard IV(A) Loyalty, all three actions are required.

B. Incorrect because according to Standard IV(A) Loyalty, all three actions are required.

C. **Correct** because according to Standard IV(A) Loyalty, members and candidates who plan to engage in independent practice for compensation must notify their employer and describe the types of services they will render to prospective independent clients, the expected duration of the services, and the compensation for the services.

Guidance for Standards I–VII

- demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity

Solution

A. Incorrect as both Amari and Jacobs violated Standard VI(C), Referral Fees.

B. Incorrect as both Amari and Jacobs violated Standard VI(C), Referral Fees.

C. **Correct** because according to Standards VI(C), Referral Fees, appropriate disclosure means that members and candidates must advise the client or prospective client, before entry into any formal agreement for services, of any benefit given or received for the recommendation of any services provided by the member or candidate. In addition, the member or candidate must disclose the nature of the consideration or benefit, together with the estimated dollar value. Jacobs does not provide the estimated dollar value and and Amari discloses after the agreement is signed. Therefore, they both violate Standard VI(C).

Guidance for Standards I–VII

- demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity

Solution

A. Correct because Ducumon should refuse to recommend the shares as her opinion of the Babyskin shares must not be affected by internal pressure. If Ducumon followed the request from the investment banking department at her company, she would be in violation of Standard I(B), Independence and Objectivity. Ducumon must refuse to recommend the Babyskin shares until they are an attractive purchase based on fundamental analysis and market pricing.

B. Incorrect because Ducumon should refuse to recommend the shares, as she must issue only recommendations that reflect her independent and objective opinion. Ducumon must refuse to recommend the Babyskin shares until they are an attractive purchase based on fundamental analysis and market pricing.

C. Incorrect because Ducumon should refuse to recommend the shares, as she must issue only recommendations that reflect her independent and objective opinion. Ducumon must refuse to recommend the Babyskin shares until they are an attractive purchase based on fundamental analysis and market pricing.

Guidance for Standards I–VII

- recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct

Solution

A. Correct because disclosure should be made as required by Standard VI(A), Disclosure of Conflicts. This standard does not preclude an analyst from owning shares in a covered company but any ownership needs to be adequately disclosed. As the stock in question has been held for many years it may not be practical to sell it due to issues such as tax consequences. In addition, since the analyst has been hired to initiate coverage of mining companies, the firm may not have other analysts that would be as competent in completing a research report on mining companies.

B. Incorrect because the stock in question has been held for many years and it may not be practical to sell it due to capital gains taxes or other issues. Full disclosure should be made as required by Standard VI(A), but selling any existing holdings prior to writing a research report is not a requirement of the standards.

C. Incorrect because Tsang is able to write the report for his employer as long as his ownership is adequately disclosed.

Guidance for Standards I–VII

- recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct

Solution

A. Correct because according to Standard I (C), Misrepresentation, members and candidates must disclose their intended use of external managers and must not represent those managers' investment practices as their own.

B. Incorrect because Standard I (C), Misrepresentation, does not require that a benchmark always be provided in order to comply. Some investment strategies may not lend themselves to displaying an appropriate benchmark because of the complexity or diversity of the investments included.

C. Incorrect because according to Standard I (C), Misrepresentation, research and models developed while employed by a firm are the property of the firm. The firm retains the right to continue using the work completed after a member or candidate has left the organization. The firm may issue future reports without providing attribution to the prior analysts.

Guidance for Standards I–VII

- demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity

Solution

A. Correct because Standard IV(B), Additional Compensation Arrangements, requires members and candidates to obtain permission from their employer before accepting compensation or other benefits from third parties for the services rendered to the employer or for any services that might create a conflict with their employer's interest. Since the activity in concern is teaching, there is no conflict with the employer and hence no approval is needed. Additionally, the teaching is done on holiday weekends and the pay is nominal. According to Standard VI(A), Disclosure of Conflicts, members and candidates must make full and fair disclosure of all matters that could reasonably be expected to impair their independence and objectivity or interfere with respective duties to their clients, prospective clients, and employer. Grewal teaches on holiday weekends which does not pose any conflict of interest with his employer and hence no disclosure is necessary. Neither Standard is violated.

B. Incorrect because according to Standard VI(A), Disclosure of Conflicts, members and candidates must make full and fair disclosure of all matters that could reasonably be expected to impair their independence and objectivity or interfere with respective duties to their clients, prospective clients, and employer. Grewal teaches on holiday weekends which does not pose any conflict of interest with his employer and hence no disclosure is necessary. Standard VI(A) is not violated.

C. Incorrect because Standard IV(B), Additional Compensation Arrangements, requires members and candidates to obtain permission from their employer before accepting compensation or other benefits from third parties for the services rendered to the employer or for any services that might create a conflict with their employer's interest. Since the activity in concern is teaching, there is no conflict with the employer and hence no approval is needed. Additionally, the teaching is done on holiday weekends and the pay is nominal.

Guidance for Standards I–VII

- demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity

Solution

A. Correct because according to the GIPS standards, asset owners may comply with the GIPS standards in the same way as firms if they compete for business. If they don't compete for business but report their performance to an oversight body, asset owners may choose to comply with the GIPS standards for asset owners.

B. Incorrect because according to the GIPS standards, Consultants cannot make a claim of compliance unless they actually manage assets for which they are making a claim of compliance.

C. Incorrect because according to the GIPS standards, Consultants cannot make a claim of compliance unless they actually manage assets for which they are making a claim of compliance.

Introduction to the Global Investment Performance Standards (GIPS)

- explain why the GIPS standards were created, who can claim compliance, and who benefits from compliance

Solution

A. Incorrect because the GIPS standards do not address every aspect of performance measurement and will continue to evolve over time to address additional areas of investment performance.

B. **Correct** because the GIPS standards require firms to adhere to certain calculation methodologies to allow for comparability across firms.

C. Incorrect because the GIPS standards firms must include all actual, fee-paying, discretionary segregated accounts in at least one composite defined by investment mandate, objective, or strategy.

Introduction to the Global Investment Performance Standards (GIPS)

- describe the key concepts of the GIPS Standards for Firms

Solution

A. Incorrect because according to the recommended procedures for compliance with the Standard relating to misconduct, members should encourage their firms to disseminate to all employees a list of potential violations and associated disciplinary sanctions. Therefore, it is not a recommended procedure to disseminate a list of past violations.

B. **Correct** because according to the recommended procedures for compliance with the Standard relating to misconduct, members should encourage their firms to check references of potential employees to ensure that they are of good character.

C. Incorrect because according to the recommended procedures for compliance with the Standard relating to misconduct, members should encourage their firms to disseminate to all employees a list of potential violations and associated disciplinary sanctions. Therefore, it is not a recommended procedure to disseminate a list of past violations.

Guidance for Standards I–VII

- recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct

Solution

A. Incorrect because Standard VII(A), Conduct as Participants in CFA Institute Programs, was violated by candidates revealing specific formulas.

B. Incorrect because Standard VII(A), Conduct as Participants in CFA Institute Programs, was violated by candidates revealing portions of the CBOK covered on the exam and portions not covered.

C. **Correct** because discussing the level of difficulty of the essay portion of the examination is not a violation of Standard VII(A)–Conduct as Participants in CFA Institute Programs.

Guidance for Standards I–VII

- recommend practices and procedures designed to prevent violations of the Code of Ethics and Standards of Professional Conduct

Solution

A. Correct because according to Standard V(B), Communication with Clients and Prospective Clients, if recommendations are contained in capsule form (such as a recommended stock list), members and candidates should notify clients that additional information and analyses are available from the producer of the report. In addition, members and candidates using any social media service to communicate business information must be diligent in their efforts to avoid unintended problems because these services may not be available to all clients. When providing information to clients through new technologies, members and candidates should take reasonable steps to ensure that such delivery would treat all clients fairly and, if necessary, be considered publicly disseminated. Leung posts the recommended stock list on social media, which is accessible to all of his firm's clients, with additional information upon request. Therefore, Leung has not violated Standard V(B).

B. Incorrect because according to Standard V(B), Communication with Clients and Prospective Clients, if recommendations are contained in capsule form (such as a recommended stock list), members and candidates should notify clients that additional information and analyses are available from the producer of the report. Leung posts the recommended stock list to all of his firm's clients with additional information upon request. Therefore, Leung has not violated Standard V(B).

C. Incorrect because according to Standard V(B), Communication with Clients and Prospective Clients, members and candidates using any social media service to communicate business information must be diligent in their efforts to avoid unintended problems because these services may not be available to all clients. When providing information to clients through new technologies, members and candidates should take reasonable steps to ensure that such delivery would treat all clients fairly and, if necessary, be considered publicly disseminated. Because all of Leung's clients have access to the social medium through which Leung communicated, Leung has not violated Standard V(B).

Guidance for Standards I–VII

- demonstrate the application of the Code of Ethics and Standards of Professional Conduct to situations involving issues of professional integrity

Solution

A. Correct because the monitoring role of lenders is most likely to insure high-quality financial reports because the lenders inspect financial reports carefully to be sure they are not manipulated.

B. Incorrect because the need to meet specific financial ratios may motivate managers to manipulate financial reports to achieve the target ratios.

C. Incorrect because the desire to avoid financial triggers may motivate managers to manipulate financial reports so that loan covenants are not violated.

Financial Reporting Quality

- describe mechanisms that discipline financial reporting quality and the potential limitations of those mechanisms

Solution

A. Incorrect because corporate takeovers can be pursued in several different ways, Managerial teams can also be displaced through a tender offer, which involves shareholders selling their interests directly to the group seeking to gain control. A takeover mechanism by which shareholders are persuaded to vote for a group seeking a controlling position on a company's board of directors describes a proxy contest and not a tender offer.

B. Correct because corporate takeovers can be pursued in several different ways. One mechanism is the proxy contest (or proxy fight). In a proxy contest, shareholders are persuaded to vote for a group seeking a controlling position on a company's board of directors.

C. Incorrect because corporate takeovers can be pursued in several different ways a hostile takeover is an attempt by one entity to acquire a company without the consent of the company's management. A takeover mechanism by which shareholders are persuaded to vote for a group seeking a controlling position on a company's board of directors describes a proxy contest and not a hostile takeover.

Corporate Governance: Conflicts, Mechanisms, Risks, and Benefits

- describe corporate governance and mechanisms to manage stakeholder relationships and mitigate associated risks

Solution

A. Incorrect because the impairment loss is a non-cash item and does not affect cash from operations.

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

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

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

C. Incorrect because it was determined with no discounting of future benefits, resulting in an incorrect impairment charge: 28.4 – (3 × 7) = 7.4.

Analysis of Long-Term Assets

- explain and evaluate how impairment and derecognition of property, plant, and equipment and intangible assets affect the financial statements and ratios

Solution

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

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

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

Topics in Long-Term Liabilities and Equity

- explain the financial reporting of leases from the perspectives of lessors and lessees

Solution

A. Incorrect because like a limited partnership, owners in a corporation (and US LLC) have limited liability, and don't share all risk and business liability.

B. Incorrect because a limited partnership must have at least one general partner with unlimited liability who is responsible for the management of the business. Remaining partners, called limited partners, have limited liability, meaning they can lose only up to the amount of their investment in the limited partnership.

C. **Correct** because general partnerships have a small number of partners who establish the business by contributing equal amounts of capital. A key feature of general partnerships is that partners share all risk and business liability.

Organizational Forms, Corporate Issuer Features, and Ownership

- compare the organizational forms of businesses

Solution

A. 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.

B. **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.

C. 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.

Monetary Policy

- explain the interaction of monetary and fiscal policy

Solution

A. Incorrect because inventories are measured at the lower of cost or market under US GAAP.

B. **Correct** because inventories are measured at the lower of cost or net realizable value under IFRS.

C. Incorrect because inventories are measured at the lower of cost or net realizable value under IFRS. Net realizable value is the estimated selling price *less* the estimated costs of completion and costs necessary to make the sale, not just the estimated selling price.

Analysis of Inventories

- describe the presentation and disclosures relating to inventories and explain issues that analysts should consider when examining a company's inventory disclosures and other sources of information

Solution

A. Incorrect because independence, credibility, and transparency are arguably the crucial ingredients for an effective central bank, whether they target inflation or not. Thus, maintaining reasonable inflation targets (or even targeting inflation) is not a crucial requirement for a central bank to be considered effective.

B. **Correct** because independence, credibility, and transparency are arguably the crucial ingredients for an effective central bank, whether they target inflation or not.

C. Incorrect because independence, credibility, and transparency are arguably the crucial ingredients for an effective central bank, whether they target inflation or not. Additionally, one way of establishing credibility is for a central bank to be transparent in its decision making. By explaining their views on the economy and by being transparent in decision making, the independent, inflation-targeting central banks seek to gain reputation and credibility, making it easier to influence inflation expectations and hence ultimately easier to meet the inflation target. Thus, preserving the confidentiality of its economic views contradicts a crucial ingredient of transparency.

Monetary Policy

- describe tools used to implement monetary policy tools and the monetary transmission mechanism, and explain the relationships between monetary policy and economic growth, inflation, interest, and exchange rates

Solution

A. Incorrect because if a revaluation initially decreases the carrying amount of the asset class, the decrease is recognised in profit or loss. Later, if the carrying amount of the asset class increases, the increase is recognised in profit or loss to the extent that it reverses a revaluation decrease of the same asset class previously recognised in profit or loss. Any increase in excess of the reversal amount will not be recognised in the income statement but will be recorded directly to equity in a revaluation surplus account. 2,000,000 which represents the reversal of a revaluation recognized in profit or loss, is reported on the income statement in Year 2.

B. Correct because if a revaluation initially decreases the carrying amount of the asset class, the decrease is recognised in profit or loss. Later, if the carrying amount of the asset class increases, the increase is recognised in profit or loss to the extent that it reverses a revaluation decrease of the same asset class previously recognised in profit or loss. Any increase in excess of the reversal amount will not be recognised in the income statement but will be recorded directly to equity in a revaluation surplus account. In Year 1, a loss of 2,000,000 is recognized in profit and loss; In Year 2, the loss of 2,000,000 is reversed on the income statement as a gain, and the excess of 3,000,000 (5,000,000 – 2,000,000) bypasses profit or loss and goes through OCI to the revaluation surplus.

C. Incorrect because it calculates the change in revaluation surplus as being equal to the entire increase in FMV from 18,000,000 to 23,000,000. If a revaluation initially decreases the carrying amount of the asset class, the decrease is recognised in profit or loss. Later, if the carrying amount of the asset class increases, the increase is recognised in profit or loss to the extent that it reverses are valuation decrease of the same asset class previously recognised in profit or loss. Any increase in excess of the reversal amount will not be recognised in the income statement but will be recorded directly to equity in a revaluation surplus account. 5,000,000 is the total amount reported on the income statement (2,000,000) plus the revaluation surplus (3,000,000).

Analysis of Long-Term Assets

- explain and evaluate how impairment and derecognition of property, plant, and equipment and intangible assets affect the financial statements and ratios

Solution

A. Incorrect because the tax rate (which is expressed as tax paid as a percentage of net income) increased year over year, from 26.1% (€120/€460) to 26.7% (€155/€580). This is also true of tax paid as a percentage of revenue, which increased from 5.2% (€120/€2,325) to 5.9% (€155/€2,611) year over year. The company's profitability was reduced because of the higher tax rate.

B. **Correct** because gross profit margin improved from 33.3% (€775/€2,325) to 35.6% (€930/€2,611). This may be reflective of selling a new, more highly differentiated product.

C. incorrect because SG&A as a percentage of revenue slightly increased year over year: Year 1 = €260/€2,325 = 11.2% and Year 2 = €295/€2,611 = 11.3%.

Analyzing Income Statements

- evaluate a company's financial performance using common-size income statements and financial ratios based on the income statement

Solution

A. Incorrect because it is the difference between the inflation target of 3% and the long-term growth potential of 2%.

3% - 2% = 1%

B. Incorrect because it is the inflation rate and ignores the growth potential. As such this would be an expansionary rate of interest. Neutral rate = Trend growth + Inflation target.

C. Correct because the Neutral rate = Trend growth + Inflation target = 2% + 3% = 5%.

Monetary Policy

- describe qualities of effective central banks; contrast their use of inflation, interest rate, and exchange rate targeting in expansionary or contractionary monetary policy; and describe the limitations of monetary policy

Solution

A. Correct because IFRS does not require disclosure of the original date of acquisition.

B. Incorrect because the details of how fair value was obtained must be disclosed by companies using the revaluation model.

C. Incorrect because under the cost model, the carrying amount must be disclosed by companies using the revaluation model.

Analysis of Long-Term Assets

- analyze and interpret financial statement disclosures regarding property, plant, and equipment and intangible assets

Solution

A. Incorrect. It uses $CF_0 = -30$, $CF_1 = -7$, $CF_2 = +8 + 28.5 = +36.5$; IRR = –0.749%.

B. Incorrect. It uses cash flows from the difference of new balance at the beginning of year: $CF_0 = -30$, $CF_1 = -40 + 30 = -10$, $CF_2 = -30 + 40 = +10$, $CF_3 = +28.5$; IRR = –1.523%.

C. Correct. Tabulate the annual returns and the investment amounts to determine the cash flows:

Year	1	2	3
Balance from previous year	0	33.00	38.00
New Investment by Maria Delanie	30.00	7.00	0
Withdrawal by Maria Delanie	0	0	–8.00
Net balance at the beginning of the year	30.00	40.00	30.00
Investment return for the year	10%	–5%	–5%
Investment gain (loss)	3.00	–2.00	–1.50
Balance at the end of the year	33.00	38.00	28.50

$CF_0 = -30$, $CF_1 = -7$, $CF_2 = +8$, $CF_3 = +28.5$; IRR = –0.524%

Rates and Returns

- compare the money-weighted and time-weighted rates of return and evaluate the performance of portfolios based on these measures

Solution

A. Incorrect because change in unit labor costs is a lagging indicator and not a leading indicator.

B. Correct because average weekly hours, manufacturing is a leading indicator. Businesses will cut overtime before laying off workers in a downturn and increase it before rehiring in a cyclical upturn, these measures move up and down before the general economy.

C. Incorrect because employees on non-agricultural payrolls is a coincident indicator and not a leading indicator.

Understanding Business Cycles

- describe how resource use, consumer and business activity, housing sector activity, and external trade sector activity vary over the business cycle and describe their measurement using economic indicators

Solution

A. Incorrect because when the overall level of board director or manager compensation, or tenure, is excessive, the result may lead to the avoidance of risk motivated by a vested interest in keeping one's position. Thus increasing, not decreasing, management tenure could result in more risk averse behavior by management.

B. **Correct** because a compensation package relying too heavily on stock grants and options can motivate risk-taking behavior by management, since option holders participate only in upside share price moves. Similarly, too little or no use of stock grants and options awarded to managers can lead to the opposite result. However, managers and directors without a meaningful equity stake in the company are typically more risk averse in their corporate decision making so they can better protect their long-term engagement by the company.

C. Incorrect because tying management compensation to the size of the company's business would increase the risk-taking behavior of management. When director and management compensation are high and tied to the size of the business, it can also lead to 'growth for growth's sake' in which managers are motivated to pursue acquisitions and expansion that might not increase shareholder value.

Corporate Governance: Conflicts, Mechanisms, Risks, and Benefits

- describe the principal-agent relationship and conflicts that may arise between stakeholder groups

Solution

A. Incorrect because the Auditor's Report is generally provided to shareholders at least annually.

B. **Correct** because interim reports are also provided by the company either semiannually or quarterly, depending on the applicable regulatory requirements. Interim reports generally present the four basic financial statements and condensed notes but are not audited.

C. Incorrect because the Auditor's Report is generally provided to shareholders at least annually.. In addition, companies also provide information on management and director compensation, company stock performance, and any potential conflicts of interest that may exist between management, the board, and shareholders. This information may appear in the company's annual report or other publicly available documents. Public companies often provide this information in proxy statements, which are statements distributed to shareholders about matters that are to be put to a vote at the company's annual (or special) meeting of shareholders. Accordingly, the proxy statement provides other information and generally does not provide unaudited (or audited) financial statements.

Introduction to Financial Statement Analysis

- describe information sources that analysts use in financial statement analysis besides annual and interim financial reports

Solution

A. Incorrect because a discount rate of 15% results in a negative NPV.

B. Incorrect because a discount rate of 18% results in a negative NPV.

C. Correct because the NPV at 21% is $14.7, whereas the NPVs at other two discount rates are negative.

Year	Cash Flow	r = 15%	r = 18%	r = 21%	Calculation
0	–$606,061	–$606,061.00	–$606,061.00	–$606,061.00	–606,061
1	2,151,515	1,870,882.60	1,823,317.80	1,778,111.60	$+2,151,515/(1 + r)$
2	–2,542,424	–1,922,437.80	–1,825,929.30	–1,736,509.80	$-2,542,424/(1 + r)^2$
3	1,000,000	657,516.20	608,630.90	564,473.90	$+1,000,000/(1 + r)^3$
	NPV	–$100.00	–$41.60	+$14.70	r = Discount rate

Capital Investments and Capital Allocation

- describe the capital allocation process, calculate net present value (NPV), internal rate of return (IRR), and return on invested capital (ROIC), and contrast their use in capital allocation

Solution

A. Incorrect because the action lag refers to the length of time required to actually implement a policy action once it has been decided on. In the case of infrastructure spending, it may take several months of planning before the project is put into action, thereby constraining its near-term stimulative effect.

B. Incorrect because the impact lag refers to the length of time required for a policy action to become evident in the economy. When spending on an infrastructure project begins, there will be a delay in judging its effects and making any related adjustments to more effectively stimulate the economy due to the impact lag.

C. Correct because recognition lag refers to the time required before policymakers realize that a policy action is required because data appear with a considerable lag and are subject to substantial revision. A policy action to spend on infrastructure would occur at the conclusion of this lag and, as a result, the recognition lag is not a constraint on any specific type of policy action.

Fiscal Policy

- explain the implementation of fiscal policy and difficulties of implementation as well as whether a fiscal policy is expansionary or contractionary

Solution

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

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

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

The Firm and Market Structures

- explain supply and demand relationships under oligopoly, including the optimal price and output for firms as well as pricing strategy

Solution

A. Incorrect because a monetary union is a type of arrangement with no separate legal tender. Each monetary union member uses a common unit as its currency.

B. Incorrect because in a fixed parity system, there is no legislative commitment to maintaining the specified parity.

C. **Correct** because the IMF defines a *currency board system* (CBS) as a monetary regime based on an explicit legislative commitment to exchange domestic currency for a specified foreign currency at a fixed exchange rate, combined with restrictions on the issuing authority to ensure fulfillment of its legal obligation.

The Foreign Exchange Market and Capital Flows

- describe exchange rate regimes and explain the effects of exchange rates on countries' international trade and capital flows

Solution

A. Incorrect because it subtracts rather than adds the forwards points to arrive at the forward rate: spot rate – (forward points / 10,000) = 1.0993 – (11.7 / 10,000) = 1.0981.

B. **Correct** because the six month forward rate = spot rate + (forward points / 10,000) = 1.0993 + (11.7 / 10,000) = 1.10047, which is closest to 1.1005.

C. Incorrect because it is the spot rate multiplied by 1 plus the forward points divided by 100 (i.e. forward points expressed as a percentage). Spot rate × (1+ forward points / 100) = 1.0993 × (1 + 11.7 / 100) = 1.2279.

Exchange Rate Calculations

- explain the arbitrage relationship between spot and forward exchange rates and interest rates, calculate a forward rate using points or in percentage terms, and interpret a forward discount or premium

Solution

A. Incorrect because the decrease in working capital is incorrectly subtracted from the sum of net income and depreciation expense: CFO (in millions) = €300 + €35– €35 = €300.

B. Incorrect because it subtracts the increase in accounts payable; or CFO (in millions) = €300 + €35 – (€20 – €30 + €25) = €320.

C. **Correct** because CFO = Net income + Depreciation expense – Increase in working capital. Increase in working capital = Increase in inventory + Increase in accounts receivable – Increase in accounts payable. Increase in working capital = €20 – €30 – €25 = –€35, i.e. actually decrease in working capital of €35 which is added to the sum of net income and depreciation expense. Consequently, CFO (in millions) = €300 + €35 – (–€35) = €370.

Analyzing Statements of Cash Flows I

- describe the steps in the preparation of direct and indirect cash flow statements, including how cash flows can be computed using income statement and balance sheet data

Solution

A. Incorrect. Rejection of a true null hypothesis is a Type I error.

B. **Correct.** Failure to reject a false null hypothesis is a Type II error.

C. Incorrect. The power of a test is the probability of correctly rejecting the null.

Hypothesis Testing

#text 801.5 × 41

- explain hypothesis testing and its components, including statistical significance, Type I and Type II errors, and the power of a test.

Solution

A. Incorrect because it is the present value of an annuity due with 9 payments instead of 10. Because the first payment occurs at $t = 0$, we can separate the annuity into two pieces: an immediate $10,000 that is received today ($t = 0$) and an ordinary annuity of $10,000 per year for 8 years.

Using the formula for the present value of the ordinary annuity with 8 payments, we compute PV = $A[1 – 1/(1 + r)^N] / r$ = 10,000 × $[1 – 1/(1+ 0.06)^8]/0.06$ = $62,097.94.

Adding the two pieces, we obtain PV = $10,000 + $62,097.94 = $72,097.94 ≈ $72,098.

Alternatively, using a financial calculator in BGN mode:

N = 9; I/Y = 6; PMT = 10,000; FV = 0; CPT PV = $72,097.94 ≈ $72,098.

B. Incorrect because this is the present value of a regular annuity with 10 payments, whereas the investment in the example is an annuity due. sing the formula for the present value of the ordinary annuity, we compute PV = $A[1 – 1/(1 + r)^N] / r$ = 10,000 × $[1 – 1/(1+ 0.06)^{10}]/0.06$ = $73,600.87 ≈ $73,601.

Alternative solution using a financial calculator in END mode:

N = 10; I/Y = 6; PMT = 10,000; FV = 0; CPT PV = $73,600.87 ≈ $73,601.

C. Correct because the investment represents an annuity due with 10 payments. Because the first payment occurs at $t = 0$, we can separate the annuity into two pieces: an immediate $10,000 that is received today ($t = 0$) and an ordinary annuity of $10,000 per year for 9 years.

Using the formula for the present value of the ordinary annuity with 9 payments, we compute PV = $A[1 – 1/(1 + r)^N] / r$ = $10,000 × $[1 – 1/(1+ 0.06)^9]/0.06$ = >$68,106.92.

Adding the two pieces, we obtain PV = $10,000 + $68,106.92 = $78,106.92 ≈ $78,107.

Alternatively, using a financial calculator with END mode:

Compute the present value of the ordinary annuity with N = 9; I/Y = 6; PMT = 10,000; FV = 0; CPT PV = $68,016.92

Adding them, we obtain PV = $10,000 + $68,016.92 = $78,016.92 ≈ $78,017.

Alternatively, using a financial calculator with BGN mode:

N = 10; I/Y = 6; PMT = 10,000; FV = 0; CPT PV = $78,016.92 ≈ $78,017.

Time Value of Money in Finance

- calculate and interpret the present value (PV) of fixed-income and equity instruments based on expected future cash flows

Solution

A. Incorrect because maintaining price stability is an objective of monetary policy not fiscal policy. There is one overarching objective of the central bank that most seem to acknowledge explicitly, and that is the objective of maintaining price stability.

B. Incorrect because targeting the exchange rate is a monetary policy objective not a fiscal policy objective. Many developing economies choose to operate monetary policy by targeting their currency's exchange rate, rather than an explicit level of domestic inflation. Such targeting involves setting a fixed level or band of values for the exchange rate against a major currency, with the central bank supporting the target by buying and selling the national currency in foreign exchange markets.

C. **Correct** because tools associated with fiscal policy involve the use of government spending and changing tax revenue to affect a number of aspects of the economy: Distribution of income and wealth among different segments of the population.

Fiscal Policy

- describe roles and objectives of fiscal policy as well as arguments as to whether the size of a national debt relative to GDP matters

Solution

A. Incorrect because the marginal tax rate is omitted when calculating the debt tax shield. $V_L \neq V_U$ + D, and therefore, $V_U \neq$ \$1.5 billion – \$0.6 billion = \$0.9 billion.

B. Correct because the value of the levered company is greater than that of the all-equity company by an amount equal to the tax rate multiplied by the value of the debt, also termed the debt tax shield. $V_L = V_U + tD$, where V_L = the value of the levered company, V_U = the value of the unlevered company, t is the marginal tax rate and tD is the debt tax shield. Therefore, \$1.5 billion = V_U + 0.30 × \$0.6 billion and V_U = \$1.32 billion ≈ \$1.3 billion.

C. Incorrect because candidates use Modigliani and Miller's Proposition I without taxes which states that the market value of a company is not affected by the capital structure of the company. Therefore, $V_L = V_U$ and the value of the unlevered company is \$1.5 billion. (p. 41)

Capital Structure

- explain the Modigliani–Miller propositions regarding capital structure

Solution

A. Correct because primary sources include short-term funds, which can include items such as trade credit, bank lines of credit, and short-term investment portfolios.

B. Incorrect because the main difference between primary and secondary sources of liquidity is that using a primary source is not likely to affect the normal operations of the company, whereas using a secondary source might result in a change in the company's financial and operating positions. Secondary sources include liquidating assets.

C. Incorrect because the main difference between primary and secondary sources of liquidity is that using a primary source is not likely to affect the normal operations of the company, whereas using a secondary source might result in a change in the company's financial and operating positions. Secondary sources include negotiating debt contracts, relieving pressures from high interest payments or principal repayments, and negotiating contracts with customers and suppliers.

Working Capital and Liquidity

- explain liquidity and compare issuers' liquidity levels

Solution

A. Incorrect because if products are price elastic, an increase in prices is associated with a decrease in volume. If demand is relatively price inelastic, revenues will benefit from inflation. If demand is relatively price elastic (i.e., elasticity is greater than unit price elasticity), revenue can decline even if unit prices are raised.

B. Incorrect because in the highly competitive consumer goods market, pricing is strongly influenced by movements in input prices, which can account for half of the COGS. In some time periods, customers' price sensitivity has resulted in a strong inverse relationship between volume and pricing. An increase in price reduces the volume, muting the effect on a company's revenue.

C. Correct because in a fragmented consumer base, the consumers have less bargaining power making it easier for companies to pass on higher costs to the consumers.

Introduction to Financial Statement Modeling

- explain how the competitive position of a company based on a Porter's five forces analysis affects prices and costs

Solution

A. Incorrect because the oligopoly market structure is based on a relatively small number of firms [not many firms] supplying the market.

B. Incorrect because another extreme is perfect competition which has many firms supplying a similar product.

C. **Correct** because in the case of monopolistic competition, there are many firms providing products to the market and one firm's product is differentiated in some way.

The Firm and Market Structures

- identify the type of market structure within which a firm operates and describe the use and limitations of concentration measures

Solution

A. Incorrect because it calculates Cash flow per share without adding back total dividends. Accordingly, Cash flow per share = (CFO – Preferred dividends) / Number of common shares outstanding = (600 – 30) / 100= 5.7.

B. Incorrect because it added back preferred dividends instead of common dividends. Accordingly, Cash flow per share = (CFO + Preferred dividends) / Number of common shares outstanding = (600 + 30) / 100 = 6.3.

C. **Correct** because Cash flow per share = (CFO – Preferred dividends) / Number of common shares outstanding. Note that if the company reports under IFRS and includes total dividends paid as a use of cash in the operating section, total dividends should be added back to CFO as reported and then preferred dividends should be subtracted. Therefore, the calculation becomes = (CFO + Total dividends – Preferred dividends) / Number of common shares outstanding = (600 + 120 – 30) / 100 = 6.9.

Analyzing Statements of Cash Flows II

- calculate and interpret free cash flow to the firm, free cash flow to equity, and performance and coverage cash flow ratios

Solution

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

B. Incorrect because an analyst can use averages of comparable companies' capital structures [not a diversified group] as the target capital structure.

C. **Correct** because an analyst can examine trends in the company's capital structure or statements by management regarding capital structure policy to infer the target capital structure.

Capital Structure

- describe optimal and target capital structures

Solution

A. Incorrect because when revenue is recognized, a contract asset is presented on the balance sheet. It is only at the point when all performance obligations have been met except for payment that a receivable appears on the seller's balance sheet.

B. **Correct** because when revenue is recognized, a contract asset is presented on the balance sheet. It is only at the point when all performance obligations have been met except for payment that a receivable appears on the seller's balance sheet.

C. Incorrect because when revenue is recognized, a contract asset is presented on the balance sheet. It is only at the point when all performance obligations have been met except for payment that a receivable appears on the seller's balance sheet. If consideration is received in advance of transferring good(s) or service(s), the seller presents a contract liability.

Analyzing Income Statements

- describe general principles of revenue recognition, specific revenue recognition applications, and implications of revenue recognition choices for financial analysis

Solution

A. Incorrect because free trade areas (FTA) are one of the most prevalent forms of regional integration in which all barriers to the flow of goods and services among members have been eliminated. However, each country maintains its own polices against non-members.

B. Incorrect because a customs union does not allow free movement of factors of production. A customs union extends the FTA by not only allowing free movement of goods and services among members but also creating a common trade policy against non-members.

C. **Correct** because a common market is the next level of economic integration that incorporates all aspects of the customs union (free movement of goods and services, and common trade policy against non-members) and extends it by allowing free movement of factors of production among members.

International Trade

- explain motivations for and advantages of trading blocs, common markets, and economic unions

Solution

A. Incorrect because the quick ratio does not include inventory and is therefore unaffected by changes in the inventory carrying amount. Quick ratio = (Cash + Short-term marketable investments + Receivables) ÷ Current liabilities.

B. Correct because the Current ratio decreases as a result of an inventory write down. The Current ratio = Current assets ÷ Current liabilities. Inventory is classified as current assets, among the current assets' required line items are cash and cash equivalents, trade and other receivables, inventories, and financial assets (with short maturities). In the event that the value of inventory declines below the carrying amount on the balance sheet, the inventory carrying amount must be written down to its net realisable value and the loss (reduction in value) recognised as an expense on the income statement. This expense may be included as part of cost of sales or reported separately. The numerator in the Current ratio is reduced by an inventory write-down and the denominator is unaffected, therefore the current ratio would decrease.

C. Incorrect because an inventory write-down would result in either an increase or unchanged payables turnover ratio, depending on where the write-down expense was recognized, instead of a decrease. In the event that the value of inventory declines below the carrying amount on the balance sheet, the inventory carrying amount must be written down to its net realisable value and the loss (reduction in value) recognised as an expense on the income statement. This expense may be included as part of cost of sales or reported separately.

When the inventory write down is included in cost of goods sold and cost of goods sold is used as a proxy of purchases, payables turnover would increase. Payables turnover = Purchases ÷ Average trade payables. While payables are not impacted by an inventory write-down, the numerator increases when COGS is used as an approximation. Note that when calculating payables turnover, cost of goods sold is sometimes used as an approximation of purchases. When the inventory write down is reported separately and does not from cost of goods sold, there would be no impact on the payables turnover ratio.

Analysis of Inventories

- describe the measurement of inventory at the lower of cost and net realisable value and its implications for financial statements and ratios

Solution

A. **Correct** because if the amount of purchases is not directly available, it can be computed as cost of goods sold plus ending inventory less beginning inventory. Alternatively, cost of goods sold is sometimes used as an approximation of purchases.

B. Incorrect because if the amount of purchases is not directly available, it can be computed as cost of goods sold plus ending inventory less beginning inventory. Alternatively, cost of goods sold is sometimes used as an approximation of purchases.

C. Incorrect because if the amount of purchases is not directly available, it can be computed as cost of goods sold plus ending inventory less beginning inventory. Alternatively, cost of goods sold is sometimes used as an approximation of purchases.

Financial Analysis Techniques

- calculate and interpret activity, liquidity, solvency, and profitability ratios

Solution

A. Correct because the variance of a random variable is the expected value (the probability-weighted average) of squared deviations from the random variable's expected value. $Var(X) = P(0)\times(0 - 0.5)^2 + P(1)\times(1 - 0.5)^2 = 0.5\times0.5^2 + 0.5\times0.5^2 = 0.25$, where expected value of X is $E(X) = 0\times0.5 + 1\times0.5 = 0.5$.

B. Incorrect because it just takes the distance from the expected value of 0.5 to potential outcomes of X of 0 or 1. It is also the standard deviation of X, *i.e.* $Var(X)^{0.5} = 0.25^{0.5} = 0.50$.

C. Incorrect because it is just a range of values that X can take = 1 – 0 = 1. It is also the sum of probabilities from the probability function of $X = 0.5 + 0.5 = 1.00$.

Probability Trees and Conditional Expectations

- calculate expected values, variances, and standard deviations and demonstrate their application to investment problems

Solution

A. Incorrect because this is not the definition of standard error, but sampling error. Sampling error is the difference between the observed value of a statistic and the quantity it is intended to estimate as a result of using subsets of the population while standard error measures how much inaccuracy of a population parameter estimate comes from sampling. Also, if we want to find out how precise the estimate of a population parameter from sampled data is relative to its true value, standard error is the metric to use.

B. **Correct** because sampling error is the difference between the observed value of a statistic and the quantity it is intended to estimate as a result of using subsets of the population.

C. Incorrect because although the standard error is the standard deviation of the sampling distribution of the parameter, 'standard deviation' in general and 'standard error' are two distinct concepts, and the terms are not interchangeable. Simply put, standard deviation measures the dispersion of the data from the mean, whereas standard error measures how much inaccuracy of a population parameter estimate comes from sampling. The contrast between standard deviation and standard error reflects the distinction between data description and inference. If we want to draw conclusions about how spread out the data are, standard deviation is the term to quote. If we want to find out how precise the estimate of a population parameter from sampled data is relative to its true value, standard error is the metric to use.

Estimation and Inference

- compare and contrast simple random, stratified random, cluster, convenience, and judgmental sampling and their implications for sampling error in an investment problem

Solution

A. Incorrect because this is the result if the cash flows are discounted for 10 years instead of 5 years; the calculation uses $(1.05)^{-10}$ as the discount factor instead of $(1.05)^{-5}$.

$PV = FV_n(1 + r)^{-n} = \$50{,}000(1.05)^{-10} = \$30{,}696.$

B. Incorrect because this is the result if the calculation for present value uses $(1.05)^{-6}$ as the discount factor instead of $(1.05)^{-5}$. That is, the cash flows are discounted back to the beginning of Year 5, one more year than they should be.

$PV = FV_n(1 + r)^{-n} = \$50{,}000(1.05)^{-6} = \$37{,}311.$

C. Correct because Year 10 is five years into the future from the end of Year 5, so the present value at the end of Year 5 is calculated using the formula

$PV = FV_n(1 + r)^{-n} = \$50{,}000(1.05)^{-5} = \$39{,}176.$

Rates and Returns

- calculate and interpret annualized return measures and continuously compounded returns, and describe their appropriate uses

Solution

A. Incorrect because this refers to pecking order theory, not Jensen's free cash flow hypothesis. The pecking order theory says that managers prefer internal financing. If internal financing is insufficient, managers next prefer debt, then equity.

B. **Correct** because according to Michael Jensen's free cash flow hypothesis higher debt levels discipline managers by forcing them to manage the company efficiently so the company can make its interest and principal payments and by reducing the company's free cash flow and thus management's opportunities to misuse cash.

C. Incorrect because this refers to debt signaling, not Jensen's free cash flow hypothesis. Managers can signal to the market their confidence in a company's prospects through the issuance of debt, which commits the company to future obligations (so-called "debt signaling").

Capital Structure

- explain factors affecting capital structure and the weighted-average cost of capital

Solution

A. Incorrect because hegemony is characterized by globalization and non-cooperation.

B. Incorrect because bilateralism is characterized by nationalism/anti-globalization and cooperation.

C. **Correct** because multilateralism is characterized by globalization and cooperation.

Introduction to Geopolitics

- describe geopolitical risk

Solution

A. Correct because the geometric mean annual return is equal to the product of the mean returns and then setting the product to the 1/nth power, where n is the number of returns. This translates to:

$$(1.122 \times 0.915 \times 1.067 \times 0.967)^{0.25} - 1 = 0.0145 = 1.45\%$$

B. Incorrect. This is the arithmetic mean annual return: (12.2% – 8.5% + 6.7% – 3.3%)/4 = 1.78%.

C. Incorrect. This is the holding period return: (1.122 × 0.915 × 1.067 × 0.967) – 1 = 0.0593 = 5.93%.

Rates and Returns

- calculate and interpret major return measures and describe their appropriate uses

Solution

A. Correct because project sequencing is a type of timing option. Delaying an investment and basing the decision on hopefully improved information that you might have in, say, a year could help improve the NPV of the projects selected. Project sequencing options allow the company to defer the decision to invest in a future investment until the outcome of some or all of a current investment is known.

B. Incorrect because project sequencing is a type of timing option, not a type of flexibility option. Once an investment is made, operational flexibilities besides abandonment or expansion may be available. Management may be able to exercise a price-setting option [which is a flexibility option to benefit from excess demand]. There are also production flexibility options which offer the operational flexibility to alter production when demand varies from what is forecast.

C. Incorrect because project sequencing is a type of timing option, not a type of fundamental option. A fundamental option exists in cases where the whole investment is essentially an option. The payoffs from the investment are contingent on an underlying asset, just like most financial options.

Capital Investments and Capital Allocation

- describe types of real options relevant to capital investments

Solution

A. Correct because in Year 2 the company paid €76,330 in cash for other operating expenses, calculated as follows:

Other operating expenses	€80,050	
Less: Decrease in prepaid expenses €8,400 – €10,600 = –€2,200	–€2,200	A deduction: Prepaid expense declined. Cash-based other operating expenses lower than accrual basis
Less: Increase in accrued utilities payable €23,020 – €21,500 = €1,520	–€1,520	A deduction: Accrued utilities payable increased. Cash-based other operating expenses lower than accrual basis
Cash paid for other operating expenses	€76,330	

B. Incorrect because this response incorrectly adds the change in accrued liabilities to operating expenses when converting to the direct method: €80,000 – €2,200 + €1,520 = €79,370.

C. Incorrect because this response incorrectly adds the change in prepaid expenses to operating expenses when converting to the direct method: €80,000 + €2,200 – €1,520 = €80,730.

Analyzing Statements of Cash Flows I

- demonstrate the conversion of cash flows from the indirect to direct method

Solution

A. Incorrect because under IFRS, financial assets are subsequently measured at amortized cost (not fair value) if the asset's cash flows occur on specified dates and consist solely of principal and interest, and if the business model is to hold the asset to maturity.

B. Incorrect because under IFRS, financial assets are subsequently measured at amortized (not historical) cost if the asset's cash flows occur on specified dates and consist solely of principal and interest, and if the business model is to hold the asset to maturity.

C. **Correct** because under IFRS, financial assets are subsequently measured at amortized cost if the asset's cash flows occur on specified dates and consist solely of principal and interest, and if the business model is to hold the asset to maturity.

Analyzing Balance Sheets

- explain the financial reporting and disclosures related to financial instruments

Solution

A. Incorrect because event risk evolves around set dates, such as elections, new legislation, or other date-driven milestones, such as holidays or political anniversaries, known in advance. Political events often result in changes to investor expectations related to a country's cooperative stance.

B. Incorrect because thematic risks are known risks that evolve and expand over a period of time. Climate change, pattern migration, the rise of populist forces, and the ongoing threat of terrorism fall into this category. Cyber threats are another example of thematic risk. Cyber risks include any attempt to expose, alter, disable, destroy, steal, or gain information through unauthorized access to or unauthorized use of computer systems.

C. **Correct** because exogenous risk is a sudden or unanticipated risk that impacts either a country's cooperative stance, the ability of non-state actors to globalize, or both. Examples include sudden uprisings, invasions, or the aftermath of natural disasters.

Introduction to Geopolitics

- describe the impact of geopolitical risk on investments

Solution

A. Incorrect because this distractor incorrectly uses book values instead of market values to calculate weights. WACC $= w_d r_d(1 - t) + w_p r_p + w_e r_e \neq (900/(900 + 300)) \times 0.04 \times (1 - 0.30) + (300/(900+300)) \times 0.06 = 0.036 = 3.6\%$.

B. **Correct** because WACC $= w_d r_d(1 - t) + w_p r_p + w_e r_e$,

where

w_d is the proportion of debt,

r_d is the before-tax marginal cost of debt,

w_p is the proportion of preferred stock,

r_p is the marginal cost of preferred stock,

w_e is the proportion of equity, and

r_e is the marginal cost of equity.

Therefore WACC $= (1000/(1000 + 500)) \times (0.04)(1 - 0.30) + (500/(1000 + 500)) \times 0.06 = 0.03867 \approx 3.9\%$.

C. Incorrect because this response does not take into account the tax deductibility of interest, i.e. WACC $= w_d r_d(1 - t) + w_p r_p + w_e r_e \neq (1000/(1000+500)) \times 0.04 + (500/(1000+500)) \times 0.06 = 0.04667 \approx 4.7\%$.

Capital Structure

- calculate and interpret the weighted-average cost of capital for a company

Solution

A. Incorrect because a low asset turnover can be an indicator of inefficiency or of relative capital intensity of the business. Company's 2 asset turnover is 2 and larger than Company 1, indicating higher efficiency.

B. Incorrect because ROE can be written as ROE = ROA x Leverage and thus ROA = ROE/Leverage. Leverage = average total assets/average shareholders' equity. For Company 1, ROA = 12%/2 = 6%. For Company 2, ROA = 18%/3 = 6%. They are equal.

C. **Correct** because ROE = Net profit margin × Total asset turnover × Leverage and thus Net profit margin = ROE/(Total asset turnover × Leverage). For Company 1, Net profit margin = 12%/(1 × 2) = 6%, which is higher than Company 2's Net profit margin = 18%/(2 × 3) = 3%.

Financial Analysis Techniques

- demonstrate the application of DuPont analysis of return on equity and calculate and interpret effects of changes in its components

Solution

A. Correct because when a company has convertible debt outstanding, the diluted EPS calculation also uses the if–converted method. Diluted EPS is calculated as if the convertible debt had been converted at the beginning of the period. If the convertible debt had been converted, the debt securities would no longer be outstanding; instead, additional shares of common stock would be outstanding. Also, if such a conversion had taken place, the company would not have paid interest on the convertible debt, so the net income available to common shareholders would increase by the after– tax amount of interest expense on the debt converted. Diluted EPS for a company that has convertible debt outstanding is calculated according to the following formula: Diluted EPS = (Net income + After-tax interest on convertible debt – Preferred dividends) ÷ (Weighted average number of shares outstanding + Additional common shares that would have been issued at conversion). As disclosed in the stem of the question the input factors into this equation are as follows:

Net income = €9,200,000

After-tax interest on convertible debt = €1,600,000× (1 – 0.35) = €1,040,000

Numbers of shares outstanding at the beginning of the year = 6,000,000

Weighted average number of shares outstanding = 6,000,000 ×3 months ÷ 12 months + 10,000,000 × 9 months ÷ 12 months = 1,500,000 + 7,500,000 = 9,000,000

Basic EPS = €9,200,000 ÷ 9,000,000 = €1.0222 ≈ €1.02

Additional common shares that would have be issued at conversion = 2,000,000

Diluted EPS = (€9,200,000 + €1,040,000) ÷ (9,000,000 + 2,000,000) = €10,240,000 ÷ 11,000,000 = €0.9309 ≈ €0.93.

As the calculated diluted EPS is lower than the basic EPS, the convertible debt is not anti-dilutive. Therefore the reported diluted EPS is €0.93.

B. Incorrect because instead the tax effect on the interest on the convertible debt is neglected and therefore the pre-tax interest expense is used in the calculation = €1,600,000. This leads to Basic EPS = €9,200,000 ÷ 9,000,000 = €1.02 and to Diluted EPS = (€9,200,000 + €1,600,000) ÷ (9,000,000 + 2,000,000) = €10,800,000 ÷ 11,000,000 = €0.98.

C. Incorrect because it calculates the average shares outstanding as (shares outstanding at beginning of year + shares outstanding at end of year) ÷ 2 = 8,000,000. This leads to Basic EPS = €9,200,000 ÷ 8,000,000 = €1.15 and Diluted EPS = (€9,200,000 + €1,040,000) ÷ (8,000,000 + 2,000,000) = €10,240,000 ÷ 10,000,000 = €1.024 ≈ €1.02. It is also the correct basic EPS.

Analyzing Income Statements

- describe how earnings per share is calculated and calculate and interpret a company's basic and diluted earnings per share for companies with simple and complex capital structures including those with antidilutive securities

Solution

A. Incorrect because only under perfect competition do firms have no pricing power. This is due to an absence of non-price competition combined with a standardized product, unlike monopolistic competition where firms have a differentiated product and can engage in non-price competition.

B. **Correct** because firms have some but not considerable pricing power under monopolistic competition. In this market structure, sellers are able to differentiate their products but at the same time can face a large number of competitors and low barriers to entry. The result is that firms have more pricing power than they would have under perfect competition (where there is no product differentiation) but less pricing power than in an oligopoly where entry barriers are high and there are fewer sellers.

C. Incorrect because firms only have considerable pricing power in oligopolistic or monopoly market structures. Under monopolistic competition there are still many sellers due to low entry barriers, hence firms have some but not considerable pricing power.

The Firm and Market Structures

- describe characteristics of perfect competition, monopolistic competition, oligopoly, and pure monopoly

Solution

A. Incorrect because an acquirer with a high current tax rate would theoretically be willing to pay more than an acquirer with a lower tax rate.

B. **Correct** because if an acquiring company is profitable, it may be able to use MU's tax loss carryforwards to offset its own tax liabilities. The value to an acquirer would be the present value of the carryforwards, based on the acquirer's tax rate and expected timing of realization. The higher the acquiring company's tax rate, and the more profitable the acquirer, the sooner it would be able to benefit. Therefore, an acquirer with a high current tax rate would theoretically be willing to pay more than an acquirer with a lower tax rate.

C. Incorrect because an acquirer with a high current tax rate would theoretically be willing to pay more than an acquirer with a lower tax rate.

Analysis of Income Taxes

- analyze disclosures relating to deferred tax items and the effective tax rate reconciliation and explain how information included in these disclosures affects a company's financial statements and financial ratios

Solution

A. Correct because from the ANOVA table, we can also calculate the standard error of the estimate which is also known as the standard error of the regression or the root mean square error. The standard error of the estimate is the square root of the mean square error. Thus, standard error of the estimate = $12^{0.5} = 3.4641 \approx 3.5$.

B. Incorrect because it is a square root of sum of squared errors, and not of the mean square error. Thus, it calculates standard error = $48^{0.5} = 6.9282 \approx 6.9$.

C. Incorrect because it is simply the mean square error, and not the square root of the mean square error. It is also the square root of the mean square regression = $144^{0.5} = 12.0$.

Simple Linear Regression

- describe the use of analysis of variance (ANOVA) in regression analysis, interpret ANOVA results, and calculate and interpret the standard error of estimate in a simple linear regression

Solution

A. Incorrect because it is the 4th out of 5 observations in the sample. It is also simply $0.8 \times 5 = 4.0$.

B. Incorrect because it is the position (not the value) of the 4th quintile: $L_{80} = (5 + 1) \times (80/100) = 6 \times 0.8 = 4.8$. It is also $0.8 \times (6 - 0) = 4.8$.

C. **Correct** because the fourth quintile is equivalent to the 80th percentile. To find the *y*th percentile (P_y), we first must determine its location. The formula for the position of a percentile in an array with n entries sorted in ascending order is $L_y = (n + 1) \times (y/100)$. In this case, $n = 5$ and $y = 80$, so $L_{80} = (5 + 1) \times (80/100) = 6 \times 0.8 = 4.8$. When L_y is not a whole number or integer, L_y lies between the two closest integer numbers (one above and one below), and we use linear interpolation between those two places to determine P_y. Thus, the value of the 4th quintile is $P_{80} = 4 + 0.8 \times (6 - 4) = 5.6$.

Statistical Measures of Asset Returns

- calculate, interpret, and evaluate measures of central tendency and location to address an investment problem

Solution

A. Incorrect because the ability to analyze Big Data using ML techniques, alongside more traditional statistical methods, represents a significant development in investment research, supported by the presence of greater data availability and advances in the algorithms themselves. Improvements in computing power and software processing speeds and falling storage costs have further supported this evolution. ML techniques are being used for Big Data analysis to help predict trends or market events, such as the likelihood of a successful merger or an outcome to a political election. Image recognition algorithms can now analyze data from satellite-imaging systems to provide intelligence on the number of consumers in retail store parking lots, shipping activity and manufacturing facilities, and yields on agricultural crops, to name just a few examples. Such information may provide insights into individual firms or at national or global levels and may be used as inputs into valuation or economic models. Thus, there is rather broad application of ML in Big Data analysis, which is expected to develop further.

B. **Correct** because ML (machine learning) still requires human judgement in understanding the underlying data and selecting the appropriate techniques for data analysis. Before they can be used, the data must be clean and free of biases and spurious data.

C. Incorrect because ML (machine learning) models also require sufficiently large amounts of data and may not perform well where there may not be enough available data to train and validate the model.

Introduction to Big Data Techniques

- describe Big Data, artificial intelligence, and machine learning

Solution

A. Correct because the target downside deviation = $[\Sigma(X_i - B)^2/(n - 1)]^{0.5}$, where X_i are the periodic returns below the target return, B is the target return, and n is the total number of periods. Since the sample has a standard deviation of 2.5%, it will have values below and above its mean of 2.2%. Since the target downside deviation ignores the deviations above the mean, it will be less than the standard deviation.

B. Incorrect because the target downside deviation = $[\Sigma(X_i - B)^2/(n - 1)]^{0.5}$, where X_i are the periodic returns below the target return, B is the target return, and n is the total number of periods. Since the sample has a standard deviation of 2.5%, it will have values below and above its mean of 2.2%. Since the target downside deviation ignores the deviations above the mean, it will be less than the standard deviation.

C. Incorrect because the target downside deviation = $[\Sigma(X_i - B)^2/(n - 1)]^{0.5}$, where X_i are the periodic returns below the target return, B is the target return, and n is the total number of periods. Since the sample has a standard deviation of 2.5%, it will have values below and above its mean of 2.2%. Since the target downside deviation ignores the deviations above the mean, it will be less than the standard deviation.

Statistical Measures of Asset Returns

- calculate, interpret, and evaluate measures of dispersion to address an investment problem

Solution

A. Incorrect because the the board is also responsible for hiring the CEO. The CEO reports to the board, the board does not report to the CEO.

B. **Correct** because directors are required under law to display a high standard of prudence, care, and loyalty to the company.

C. Incorrect because most codes addressing corporate governance standards require that board members represent a diverse mix of expertise, backgrounds, and competencies, with best practice generally dictating at least one third of the board be independent.

Investors and Other Stakeholders

- describe a company's stakeholder groups and compare their interests

Solution

A. Incorrect because a *t*-statistic tests if the intercept is statistically different from zero.

We can test whether the intercept is different from the hypothesized value,B_0, by comparing the estimated intercept ($\hat{b}_0$) with the hypothesized intercept and then

dividing the difference by the standard error of the intercept.

B. Incorrect because a *t*-statistic tests if there is a positive correlation between the dependent and independent variables, that is, whether the slope coefficient of the linear regression is greater than zero. We can use the *F*-statistic to test for the significance of the slope coefficient (that is, whether it is significantly different from zero), but we also may want to perform other hypothesis tests for the slope coefficient—for example, testing whether the population slope is different from a specific value or whether the slope is positive. We can use a *t*-distributed test statistic to test such hypotheses about a regression coefficient.

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

H_0: $b_1 = b_2 = b_3 = . . . = b_k = 0$.
H_a: At least one b_k is not equal to zero.

For simple linear regression, these hypotheses simplify to

H_0: $b_1 = 0$.

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

Simple Linear Regression

- calculate and interpret measures of fit and formulate and evaluate tests of fit and of regression coefficients in a simple linear regression

Solution

A. Correct because direct sales is a common strategy in B2B markets where the universe of potential customers is relatively small and easily reached.

B. Incorrect because the common channel strategy in this case is direct sales. Direct sales is a common strategy in B2B markets where the universe of potential customers is relatively small and easily reached. With an omnichannel strategy, both digital and physical channels are used to complete a sale.

C. Incorrect because the common channel strategy in this case is direct sales. Direct sales is a common strategy in B2B markets where the universe of potential customers is relatively small and easily reached. The traditional channel strategy is typically reflected in the flow of finished goods (e.g., from manufacturer to wholesaler, retailer, and end customer), each with its own physical facilities and with the product sold and purchased at each stage.

Business Models

- describe key features of business models

Solution

A. 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. 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.

C. **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.

Estimation and Inference

- describe the use of resampling (bootstrap, jackknife) to estimate the sampling distribution of a statistic

Solution

A. Incorrect because the cost of preferred shares was mistakenly also adjusted with the tax shield. WACC $\neq w_d r_d(1 - t) + w_p r_p (1 - t) + w_e r_e = 0.4 \times 0.08\ (1 - 0.25) + 0.1 \times 0.1\ (1 - 0.25) + 0.5 \times 0.16 = 0.1115 \approx 11.2\%$.

B. Correct because WACC $= w_d r_d(1 - t) + w_p r_p + w_e r_e = 0.4 \times 0.08\ (1 - 0.25) + 0.1 \times 0.1 + 0.5 \times 0.16 = 0.1140 = 11.4\%$.

C. Incorrect because tax deductibility of interest expense was ignored when calculating the cost of debt. WACC $\neq w_d r_d + w_p r_p + w_e r_e = 0.4 \times 0.08 + 0.1 \times 0.1 + 0.5 \times 0.16 = 0.1220 = 12.2\%$.

Capital Structure

- calculate and interpret the weighted-average cost of capital for a company

Solution

A. Correct because a correlation of 0 (uncorrelated variables) indicates an absence of any linear (that is, straight-line) relationship between the variables.

B. Incorrect because a correlation of 0 (uncorrelated variables) indicates an absence of any linear (that is, straight-line) relationship between the variables. So, a zero correlation between two variables does not rule out a non-linear relationship between the variables.

C. Incorrect because a correlation of 0 (uncorrelated variables) indicates an absence of any linear (that is, straight-line) relationship between the variables. So, a zero correlation between two variables does not rule out a non-linear relationship between the variables.

Statistical Measures of Asset Returns

- interpret correlation between two variables to address an investment problem

Solution

A. Correct because IFRS state that inventories shall be measured (and carried on the balance sheet) at the lower of cost and net realizable value; Inventory turnover ratio = Cost of sales ÷ Average inventory and Days of inventory on hand = Number of days in period / Inventory turnover ratio. Accordingly, Inventory turnover ratio = 1,000 / [(125 + 120) / 2] ≈ 8.163; and Days of inventory on hand = Number of days in period / Inventory turnover ratio = 365 / 8.163 = 44.7 ≈ 45.

B. Incorrect because inventories in both years were measured at cost instead of the lower of cost and net realizable value. Hence, Inventory turnover ratio = 1,000 / [(150 + 120) / 2] = 1,000 / 135 ≈ 7.407; and Days of inventory on hand = 365 / 7.407 = 49.3 ≈ 49.

C. Incorrect because inventories in both years were measured at net realizable value instead of the lower of cost and net realizable value. Hence, Inventory turnover ratio = 1,000 / [(125 + 160) / 2] = 1,000 / 142.5 ≈ 7.018; and Days of inventory on hand = 365 / 7.018 = 52.0 ≈ 52.

Analysis of Inventories

- describe the measurement of inventory at the lower of cost and net realisable value and its implications for financial statements and ratios

Solution

A. **Correct** because the net operating cycle indicates the amount of time that elapses from the point when a company invests in working capital until the point at which the company collects cash.

B. Incorrect because the defensive interval ratio measures how long the company can continue to pay its expenses from its existing liquid assets without receiving any additional cash inflow.

C. Incorrect because the number of DSO represents the elapsed time between a sale and cash collection, reflecting how fast the company collects cash from customers to whom it offers credit.

Financial Analysis Techniques

- calculate and interpret activity, liquidity, solvency, and profitability ratios

Solution

A. Incorrect because the quick ratio is a liquidity ratio. Liquidity ratios measure the company's ability to meet its short-term obligations.

B. Incorrect because the current ratio is a liquidity ratio. Liquidity ratios measure the company's ability to meet its short-term obligations.

C. **Correct** because the interest coverage ratio is a solvency ratio. Solvency ratios measure a company's ability to meet long-term obligations. Subsets of these ratios are also known as "leverage" and "long-term debt" ratios.

Financial Analysis Techniques

- calculate and interpret activity, liquidity, solvency, and profitability ratios