Solution

A. Correct because the recommended procedures for compliance with Standard IV (C), Responsibilities of Supervisors, state that members and candidates are encouraged to recommend that their employers adopt a code of ethics. In addition, stand-alone codes of ethics should be written in plain language and should address general fiduciary concepts.

B. Incorrect because the recommended procedures for compliance with Standard IV (C), Responsibilities of Supervisors, state that members and candidates should encourage their employers to provide their codes of ethics to clients. In this case also, a simple, straightforward code of ethics will be best understood by clients. Unencumbered by the compliance procedures, the code of ethics will be effective in conveying that the firm is committed to conducting business in an ethical manner and in the best interests of the clients.

C. Incorrect because the recommended procedures for compliance with Standard IV (C), Responsibilities of Supervisors, is to not combine the code of ethics with a detailed compliance procedures manual. The Standard states that mingling compliance procedures in the firm's code of ethics goes against the goal of reinforcing the ethical obligations of employees.

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 it is a recommended procedure. Among the recommended procedures for Standard I (B) is to *create a restricted list* and put companies on that list if the firm is unwilling to permit dissemination of adverse opinions about that company.

B. **Correct** because according to Standard I (B), Independence and Objectivity, a recommended procedure for compliance is to limit gifts, not prohibit gifts.

C. Incorrect because according to the recommended procedures for Standard I (B), firms should appoint a senior officer with oversight responsibilities for compliance with the firm's code of ethics and all regulations concerning its business.

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 Knowledge of the Law is a sub-section of Standard I–Professionalism.

B. Correct because Performance Presentation is a sub-section of Standard III–Duties to Clients. The other sub-sections include: Loyalty, Prudence and Care, Fair Dealing, Suitability, and Preservation of Confidentiality.

C. Incorrect because Independence and Objectivity is a sub-section of Standard I–Professionalism.

Code of Ethics and Standards of Professional Conduct

- identify the six components of the Code of Ethics and the seven Standards of Professional Conduct

Solution

A. Incorrect because according to Standard VII(A) relating to Conduct as Participants in CFA Institute Programs, examples of information that cannot be disclosed by candidates sitting for an exam include but are not limited to broad topical areas and formulas tested or not tested on the exam. Gupta has violated Standard VII(A).

B. **Correct** because according to Standard VII(A) relating to Conduct as Participants in CFA Institute Programs, examples of information that cannot be disclosed by candidates sitting for an exam include but are not limited to broad topical areas and formulas tested or not tested on the exam. Gupta has violated Standard VII(A).

C. Incorrect because Standard VII(A) relating to Conduct as Participants in CFA Institute Programs does not cover expressing opinions regarding CFA Institute, the CFA Program, or other CFA Institute programs. Members and candidates are free to disagree and express their disagreement with CFA Institute on its policies, its procedures, or any advocacy positions taken by the organization.

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, when the manager is responsible for the portfolios of pension plans or trusts, however, the client is not the person or entity who hires the manager but, rather, the beneficiaries of the plan or trust. The duty of loyalty is owed to the ultimate beneficiaries.

B. Incorrect because according to Standard III (A), Loyalty, Prudence, and Care, when the manager is responsible for the portfolios of pension plans or trusts, however, the client is not the person or entity who hires the manager but, rather, the beneficiaries of the plan or trust. The duty of loyalty is owed to the ultimate beneficiaries.

C. **Correct** because according to Standard III (A), Loyalty, Prudence, and Care, when the manager is responsible for the portfolios of pension plans or trusts, however, the client is not the person or entity who hires the manager but, rather, the beneficiaries of the plan or trust. The duty of loyalty is owed to the ultimate beneficiaries.

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 Kon violated Standard V (C), Record Retention by re-creating supporting records from memory.

B. Incorrect because Kon did not violate the Standards by publishing the updated research report since she obtained the express consent of her former employer. Standard V(C), Record Retention, states that when a member or candidate leaves a firm to seek other employment, the member or candidate cannot take the property of the firm, including original forms or copies of supporting records of the member's or candidate's work, to the new employer without the express consent of the previous employer.

C. Correct because a member must not re-create supporting records from sources obtained at the previous employer. Standard V(C), Record Retention, states that the member or candidate cannot use historical recommendations or research reports created at the previous firm because the supporting documentation is unavailable. For future use, the member or candidate must re-create the supporting records at the new firm with information gathered through public sources or directly from the covered company and not from memory or sources obtained at the previous employer.

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(B), Fair Dealing, 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. There is nothing to suggest that Joshi has not dealt fairly and objectively with her clients. So, there is no violation of Standard III(B).

B. **Correct** because Standard III(D). Performance Presentation, requires members and candidates to provide credible performance information to clients and prospective clients and to avoid misstating performance or misleading clients and prospective clients about the investment performance of members or candidates or their firms. This standard encourages full disclosure of investment performance data to clients and prospective clients. By not disclosing that the results related to the product were simulated Joshi has violated the Standard.

C. Incorrect because according to Standard III(B), Fair Dealing, 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. There is nothing to suggest that Joshi has not dealt fairly and objectively with her clients. So, there is no violation of Standard III(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. Incorrect because members and candidates must disclose the nature of the consideration or benefit and consideration includes all fees, whether paid in cash, in soft dollars, or in kind. Therefore, the member is also required to disclose in kind benefits to the new client.

B. Incorrect because members and candidates must disclose the nature of the consideration or benefit and consideration includes all fees, whether paid in cash, in soft dollars, or in kind. Therefore, the member is also required to disclose flat fees to the new client.

C. **Correct** because members and candidates must disclose the nature of the consideration or benefit—for example, flat fee. Further, consideration includes all fees, whether paid in cash, in soft dollars, or in kind. Therefore, the member is required to disclose both flat fees and in kind benefits to the new client.

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 Perez has violated Standard III (C), Suitability, as described in the Response Rationale for the correct answer.

B. Correct because Perez has violated Standard III (C), Suitability, since the committee-selected bond fund may not be suitable for all of her clients. Standard III (C) states that when members and candidates are in an advisory relationship with a client, they must:

- Make a reasonable inquiry into a client's or prospective client's investment experience, risk and return objectives, and financial constraints prior to making any investment recommendation or taking investment action and must reassess and update this information regularly.
- Determine that an investment is suitable to the client's financial situation and consistent with the client's written objectives, mandates, and constraints before making an investment recommendation or taking investment action.
- Judge the suitability of investments in the context of the client's total portfolio.

By purchasing the bond fund that she feels is inappropriate for all of her clients, Perez has violated this Standard.

C. Incorrect because according to Standard V (A), Diligence and Reasonable Basis, Perez is allowed to rely on others at her firm to determine which managers the firm selects. If members and candidates rely on secondary or third-party research, they must make reasonable and diligent efforts to determine whether such research is sound. Secondary research is defined as research conducted by someone else in the member's or candidate's firm. Additionally, a member or candidate may rely on others in his or her firm to determine whether secondary or third-party research is sound and use the information in good faith unless the member or candidate has reason to question its validity or the processes and procedures used by those responsible for the research. Perez has not violated this Standard by accepting and acting on the committee decision.

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 Bermi has violated Standard IV (B), Additional Compensation Arrangements, by failing to obtain prior approval from her firm for providing advice to her friend.

B. 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. Compensation and benefits include direct compensation by the client and any indirect compensation or other benefits received from third parties. Bermi has violated this Standard because the donations to her favorite charity represent a form of compensation for services provided to her friend. In addition, her services constitute a conflict of interest with her employer since she provides a service that competes with her firm's service. Therefore, an email notification to the firm's compliance department will not suffice. Bermi has to obtain *prior* written permission from her employer.

C. Incorrect because Bermi has not violated Standard V(B), Communication with Clients and Prospective Clients, which requires that members and candidates disclose to clients and prospective clients the basic format and general principals of the investment processes they use to analyze investments, select securities, and construct portfolios.

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 III(E), Preservation of Confidentiality, requires that members and candidates preserve the confidentiality of information communicated to them by their clients, prospective clients, and former clients. Details of former clients cannot be shared with third party service providers and this is a violation of the Standard.

B. Incorrect because according to Standard III(E), Preservation of Confidentiality, it is important to convey to clients that not all firm-sponsored resources may be appropriate for communicating confidential information.

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. This is not a violation of the Standards when permitted by law.

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 making full and fair disclosure of all matters that could reasonably be expected to impair one's independence and objectivity or interfere with respective duties to one's clients is required by Standard VI(A), Disclosure of Conflicts.

B. Incorrect because written permission from both parties would be needed to provide 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. The requirement to disclose under Standard VI A), Disclosure of Conflicts, does not mandate that this be in writing. In fact, members and candidates have the responsibility of determining how often, in what manner, and in what particular circumstances the disclosure must be made.

C. Incorrect because the signing of confidentiality agreements does not necessarily provide full and fair disclosure of all matters that could reasonably be expected to impair Badawi's independence and objectivity or interfere with respective duties to his clients as required by Standard VI(A), Disclosure of Conflicts.

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 published stock exchange data is considered valid data. There is no evidence the stock exchange is an unreliable source of accurate data. Therefore, as per Standard V(A) Diligence and Reasonable Basis, it is not necessary to consider the validity of the stock exchange trading volumes reported and Kertz can use the data in "good faith".

B. Correct because according to Standard V(A) Diligence and Reasonable Basis, if members rely on secondary or third-party research, they must make reasonable and diligent efforts to determine whether such research is sound. Criteria that a member can use in forming an opinion on whether research is sound includes an evaluation of the objectivity and independence of the recommendations.

C. Incorrect because according to Standard V(A) Diligence and Reasonable Basis, research recommendations reflect the consensus of the group and are not necessarily the views of the member, even through the name of the member is included on the report. If the member is confident in the process, the member does not need to dissociate from the report even if it does not reflect his or her opinion. Therefore, Kertz does not need to confirm the investment recommendation was 100% supported by each analyst.

Ethics Application

- evaluate practices, policies, and conduct relative to the CFA Institute Code of Ethics and Standards of Professional Conduct

Solution

A. Incorrect because if the staff under discussion for possible termination are in low-level positions, the information is unlikely to be considered material.

B. Incorrect because the absence of specific names being mentioned does not necessarily make the information non-material when disclosed to clients prior to any public dissemination.

C. **Correct** because in order to comply with the Code and Standards, a member or candidate cannot use material nonpublic information when making investment recommendations. The information overheard would be considered material only if any public announcement of the staff removal would be likely to move the share price of the bank. In this case, the discussed changes are unlikely to affect investor perception of the bank, so Msafari could use the information when making an investment recommendation.

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 the recommendations for Standard III (B), Fair Dealing, when allocating trades for new issues, procedures should include obtaining advance indications of interest, allocating securities by client (rather than portfolio manager), and providing a method for calculating allocations.

B. **Correct** because according to the recommendations for Standard III (B), Fair Dealing, procedures should include processing and executing orders on a first-in, first-out basis with consideration of bundling orders for efficiency as appropriate for the asset class or the security.

C. Incorrect because according to the recommendations for Standard III (B), Fair Dealing, procedures should include giving all client accounts participating in a block trade the same execution price and charging the same commission. So, the price should be the same, not based on order arrival time.

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 (A), Knowledge of the Law, if a member or candidate has reasonable grounds to believe that imminent or ongoing client or employer activities are illegal or unethical, the member or candidate must dissociate, or separate, from the activity.

B. Incorrect because according to Standard I (A), Knowledge of the Law, while members and candidates must understand the applicable laws and regulations of the countries and jurisdictions where they engage in professional activities they are not required to have detailed knowledge of or be experts on all the laws that could potentially govern their activities.

C. Incorrect because even though Standard I (A), Knowledge of the Law, states that CFA Institute strongly encourages members and candidates to report potential violations of the Code and Standards committed by fellow members and candidates, the Standard does not make this a requirement.

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

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

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

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

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

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

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 it is not a violation to not pay fees if the person does not claim to be a CFA charterholder or a member of the CFA Institute.

B. **Correct** because according to Standard VII(B), Reference to CFA Institute, the CFA Designation, and the CFA Program, it is a violation to claim that the CFA charter helped her to achieve superior returns.

C. Incorrect because it is appropriate to claim that being a charterholder has improved her portfolio management skills.

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 V(B), Communication with Clients and Prospective Clients, members must distinguish between fact and opinion in the presentation of investment analyses and recommendations.

B. Incorrect because according to Standard V(B), Communication with Clients and Prospective Clients, members must promptly disclose any material, not nonmaterial, changes affecting the investment process. Disclose to clients and prospective clients the basic format and general principles of the investment processes they use to analyze investments, select securities, and construct portfolios and must promptly disclose any changes that might materially affect those processes.

C. Incorrect because according to Standard V(B), Communication with Clients and Prospective Clients, members must promptly disclose any material, not nonmaterial, changes affecting the investment process. Disclose to clients and prospective clients the basic format and general principles of the investment processes they use to analyze investments, select securities, and construct portfolios and must promptly disclose any changes that might materially affect those processes.

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 transaction-based manipulation involves instances where a member or candidate knew or should have known that his or her actions could affect the pricing of a security. This type of manipulation includes, but is not limited to, the following: securing a controlling, dominant position in a financial instrument to exploit and manipulate the price of a related derivative and/or the underlying asset.

B. Incorrect because Standard II (B) is not intended to preclude transactions undertaken on legitimate trading strategies based on perceived market inefficiencies. Therefore, taking investment positions - even aggressive ones - with an intent to exploit market inefficiencies does not represent market manipulation.

C. Incorrect because information-based manipulation includes, but is not limited to, spreading false rumors to induce trading by others. For example, members and candidates must refrain from “pumping up” the price of an investment by issuing misleading positive information or overly optimistic projections of a security's worth. Therefore, overly optimistic projections that induce trading by other market participants forms part of information-based, and not transaction-based manipulation.

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 the GIPS standards, once a firm claims compliance with the standards, they may voluntarily hire an independent third party to perform a verification in order to increase confidence in the firm's claim of compliance. Therefore, Statement 1 is incorrect.

B. Incorrect because according to the GIPS standards verification is performed with respect to an entire firm, not on specific composites. Verification does not ensure the accuracy of any specific composite presentation. Therefore, Statement 2 is incorrect.

C. **Correct** because according to the GIPS standards, verification is performed with respect to an entire firm, not on specific composites. Therefore, Statement 3 is correct.

Introduction to the Global Investment Performance Standards (GIPS)

- describe the concept of independent verification

Solution

A. Incorrect because the causality is reversed; strategy determines discretion for portfolios, not vice versa The firm's definition of discretion establishes criteria to judge which portfolios must be included in a composite and is based on the firm's ability to implement its investment strategies.

B. **Correct** because the firm's definition of discretion establishes criteria to judge which portfolios must be included in a composite and is based on the firm's ability to implement its investment strategies.

C. Incorrect because firms may not choose portfolios to include in a composite based on performance: the requirement to create, use and maintain composites is designed to prevent firms from cherry-picking—using the best-performing accounts to represent the performance of an investment strategy.

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 by not detailing the commission structure to her clients, Yip does not disclose the potential reason for her favoring front-end load funds over back-end load as the commission is higher and is paid immediately, rather than at the end of the year.

B. Incorrect because Yip does not disclose the commission structure in detail, which could impair her independence when recommending front-load mutual funds rather than back-end load mutual funds to her clients.

C. **Correct** because Yip's investments do not adversely affect the interest of the clients and therefore do not violate the Priority of Transactions requirement. A candidate having the same investment positions does not always create a conflict of interest, and in some instances having an aligned investment portfolio can be beneficial to the client. By not detailing the commission structure to her clients, Yip does not disclose the potential reason for her favoring front-end load funds over back-end load as the commission is higher and is paid immediately rather than at the end of the year and is in violation of Standard VI(A), Disclosure of Conflicts. Yip also does not disclose the commission structure in detail, which could impair her independence when recommending front-load mutual funds rather than back-end load mutual funds to her clients, a violation of Standard VI(C), Referral Fees.

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 institutional accounts may be included in a composite with retail accounts if they have a similar investment mandate, objective, or strategy.

B. Correct because a composite must include all actual, fee-paying, discretionary segregated accounts managed in accordance with the same investment mandate, objective, or strategy.

C. Incorrect because non-fee-paying accounts are not required to be in a GIPS-compliant composite.

Introduction to the Global Investment Performance Standards (GIPS)

- describe the key concepts of the GIPS Standards for Firms

Solution

A. Correct because Standard I (D), Misconduct, addresses all conduct that reflects poorly on the professional integrity, good reputation, or competence of members and candidates.

B. Incorrect because Standard I (D), Misconduct, is primarily aimed at conduct and actions related to a member's or candidate's professional life.

C. Incorrect because Standard I (D) addresses all conduct that reflects poorly on the professional integrity, good reputation, or competence of members and candidates; the Standard doesn't address all actions in members' private lives.

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 member did not contact clients using information from her previous employer so she did not violate Standard IV(A)–Loyalty by these actions. Contacting former clients for any reason through the use of client lists or other information taken from a prior employer without permission would be a violation of the standard because client records are the property of the firm.

B. Incorrect because West Star does not have any non-compete agreements so the analyst is free to seek employment elsewhere.

C. **Correct** because the portfolio manager violated Standard IV(A)–Loyalty by taking proprietary trading software from her former employer. Although the manager created the software, it was during a period of time when West Star employed her, so the software is not her property to take with her to her new employer. The member contacted clients using public information, so she did not violate Standard IV(A)–Loyalty. Because Viggen was not obligated to abide by a non-compete agreement that would likely restrict recruitment of former colleagues, Viggen is most likely free to recruit the analyst from his former employer.

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 a firm has only two options with regard to compliance with the GIPS standards: fully comply with all requirements of the GIPS standards and claim compliance through the use of the GIPS Compliance Statement; or not comply with all requirements or the GIPS standards and not claim compliance with, or make any reference to, the GIPS standards.

B. Incorrect because the firm is referencing the GIPS standards improperly by making a statement of its intention to be in GIPS compliance by a future date. A firm has only two options with regard to compliance with the GIPS standards: fully comply with all requirements of the GIPS standards and claim compliance through the use of the GIPS Compliance Statement; or not comply with all requirements or the GIPS standards and not claim compliance with, or make any reference to, the GIPS standards.

C. Incorrect because a firm is not allowed to claim partial compliance. A firm has only two options with regard to compliance with the GIPS standards: fully comply with all requirements of the GIPS standards and claim compliance through the use of the GIPS Compliance Statement; or not comply with all requirements or the GIPS standards and not claim compliance with, or make any reference to, the GIPS standards.

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 autarky describes countries seeking political self-sufficiency with little or no external trade or finance.

B. **Correct** because hegemonic countries tend to be regional or even global leaders, and they use their political or economic influence of others to control resources.

C. Incorrect because multilateralism describes countries that participate in mutually beneficial trade relationships and extensive rules harmonization.

Introduction to Geopolitics

- describe geopolitics from a cooperation versus competition perspective

Solution

A. Incorrect because it subtracts Preferred dividends in the numerator of the Diluted EPS formula. If the convertible shares had been converted, there would be two effects. First, the convertible preferred securities would no longer be outstanding; instead, additional common stock would be outstanding, second, if such a conversion had taken place, the company would not have paid preferred dividends. The calculation becomes Diluted EPS = (Net income – Preferred dividends) / (Weighted average number of shares outstanding + New common shares that would have been issued at conversion); or = ($1,800,000 – $600,000) / [200,000 + (50,000 × 4)] = $1,200,000 / 400,000 = $3.00.

B. **Correct** because the effect of using if-converted method would be a reported diluted EPS of $4.50. The if-converted method is based on what EPS would have been if the convertible preferred securities had been converted at the beginning of the period. If the convertible shares had been converted, there would be two effects. First, the convertible preferred securities would no longer be outstanding; instead, additional common stock would be outstanding. Thus, under the if-converted method, the weighted average number of shares outstanding would be higher than in the basic EPS calculation. Second, if such a conversion had taken place, the company would not have paid preferred dividends. Diluted EPS using the if-converted method for preferred stock is Net income/ (Weighted average number of shares outstanding + New common shares that would have been issued at conversion); or = $1,800,000 / [200,000 + (50,000 × 4)] = $1,800,000 / 400,000 = $4.50. Basic EPS = (Net income – Preferred dividends) / Weighted average number of shares outstanding = ($1,800,000 – $600,000) / 200,000 = $6.00. As Basic EPS of $6.00 is higher than diluted EPS of $4.50, the convertible preferred stock is dilutive (rather than antidilutive), and the diluted EPS of $4.50 should thus be reported.

C. Incorrect because it calculates Basic EPS = (Net income – Preferred dividends) / Weighted average number of shares outstanding = ($1,800,000 – $600,000) / 200,000 = $6.00.

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 while normalized earnings may be estimated in certain cases as the historical average, in others instances the best fit regression model is used Also, the definition should adjust for unusual or temporary factors: normalized earnings are the expected level of mid-cycle earnings for a company in the absence of any unusual or temporary factors that affect profitability (either positively or negatively).

B. Incorrect because if an analyst is creating a valuation model such as a DCF model, estimating a terminal value is required to capture the going-concern value of the company after the explicit forecast period. Also, normalized earnings are the expected level of mid-cycle earnings for a company in the absence of any unusual or temporary factors that affect profitability (either positively or negatively).

C. **Correct** because normalized earnings are the expected level of mid-cycle earnings for a company in the absence of any unusual or temporary factors that affect profitability (either positively or negatively).

Introduction to Financial Statement Modeling

- explain considerations in the choice of an explicit forecast horizon and an analyst's choices in developing projections beyond the short-term forecast horizon

Solution

A. Incorrect because market participants would then come to the view that higher interest rates will lead to slower economic growth, reduced profits, and reduced borrowing to finance asset purchases. The fall in asset prices as well as an increase in prices would reduce household financial wealth and therefore lead to a reduction in consumption growth.

B. Incorrect because a rise in the central bank's policy rate is likely weaken investors' confidence. Market participants would then come to the view that higher interest rates will lead to slower economic growth, reduced profits, and reduced borrowing to finance asset purchases.

C. **Correct** because there is a whole range of interconnected ways in which a rise in the central bank's policy rate can reduce real domestic demand and net external demand (that is, the difference between export and import consumption). Weaker total demand would tend to put downward pressure on the rate of domestic inflation—as would a stronger currency, which would reduce the prices of imports. Taken together, these might begin to put downward pressure on the overall measure of inflation.

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

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

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

Analysis of Long-Term Assets

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

Solution

A. Correct because leverage is a component of the return on equity equation under the DuPont Analysis. If leverage decreases, so will return on equity.

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

B. Incorrect because the tax burden is one of the components of ROE in the 5-factor model:

Tax burden = Net income/EBT = (EBT – Tax)/EBT = 1 – Tax/EBT = 1 – Effective tax rate

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

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

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. Incorrect because this is the change of NPM when RDR decreases by 7%. The change of NPM is equal to slope coefficient times change in RDR. When RDR decreases by 7%, the change of NPM is equal to –0.6 × (–7%) = 4.20%.

B. Correct because the predicted value of NPM when the forecasted RDR is 7% is equal to 17.38% – 0.6 × 7% = 13.18%.

C. Incorrect because it mistakenly uses 0.6 instead of –0.6 for the slope coefficient in the calculation. When –0.6 is used, the predicted value of NPM when the forecasted RDR is 7% is equal to 17.38% + 0.6 × 7% = 21.58%.

Simple Linear Regression

- calculate and interpret the predicted value for the dependent variable, and a prediction interval for it, given an estimated linear regression model and a value for the independent variable

Solution

A. Correct because if interest can be deducted the tax deductibility of debt reduces the effective marginal cost of debt.

B. Incorrect because if interest can be deducted the tax deductibility of debt reduces the effective marginal cost of debt.

C. Incorrect because if interest can be deducted the tax deductibility of debt reduces the effective marginal cost of debt.

Capital Structure

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

Solution

A. Correct because the firm's supply curve should measure the quantity the firm is willing to supply at various prices. Also, the market supply curve is the sum of the supply curves of the individual firms.

B. Incorrect because the effects of the actions of the buyers on price and quantity are described by the demand curve, not the supply curve: The demand curve shows the highest price consumers would be willing to pay for each additional unit. In effect, the demand curve is the willingness of consumers to pay for each additional unit.

C. Incorrect because the supply curve shows the lowest price (not the highest price) sellers are willing to accept for each quantity.

The Firm and Market Structures

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

Solution

A. Correct because all else equal, recognizing expenses later rather than sooner is considered to be less conservative in reporting net income.

B. Incorrect because reflecting fewer warranty claims as a percentage of sales could be due to improved product quality and a change in business operations, not to an aggressive calculation of reported net income.

C. Incorrect because estimating lower uncollectible accounts due to stricter credit policies would reflect a change in business operations and not indicate a more aggressive accounting approach.

Analyzing Income Statements

- describe general principles of expense recognition, specific expense recognition applications, implications of expense recognition choices for financial analysis and contrast costs that are capitalized versus those that are expensed in the period in which they are incurred

Solution

A. Incorrect because the Current ratio would decrease instead of increase as a result of an inventory write-down. Current ratio = Current assets / Current liabilities and 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). Current assets would decrease while Current liabilities would remain unchanged, and the Current ratio will therefore decrease as a result of an inventory write-down.

B. Correct because an inventory write-down reduces both profit and the carrying amount of inventory on the balance sheet and thus has a negative effect on profitability, liquidity, and solvency ratios. However, activity ratios (for example, inventory turnover and total asset turnover) will be positively affected by a write-down because the asset base (denominator) is reduced. Total asset turnover = Revenue / Average total assets. Inventory carrying amount decreases as a result of the write-down. Thus the denominator, Average total assets decreases while the numerator, Revenue remains unchanged. Total asset turnover ratio will therefore increase as a result of an inventory write-down.

C. Incorrect because the Receivables turnover ratio would remain unchanged instead of increase as a result of an inventory write-down. Receivables turnover ratio = Revenue / Average receivables. Neither Revenue nor Average receivables are impacted and the Receivables turnover ratio will therefore remain unchanged as a result of an inventory write-down.

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. Incorrect because a sunk cost is one that has already been incurred whereas the cost of the option will only be incurred if management proceeds with the project which has the real option.

B. **Correct** because there are several approaches a company's management may use in evaluating capital investments with real options and one approach is to consider the Project NPV = NPV (based on DCF [discounted cash flow] alone) – Cost of options + Value of options. Calculate the NPV based on expected cash flows. Then simply add the value associated with real options less their incremental cost.

C. Incorrect because if the value of the real option less the incremental cost is positive and exceeds the project NPV on an absolute basis, the project should be undertaken. There are several approaches a company's management may use in evaluating capital investments with real options and one approach is to consider the Project NPV = NPV (based on DCF [discounted cash flow] alone) – Cost of options + Value of options. Calculate the NPV based on expected cash flows. Then simply add the value associated with real options less their incremental cost. On the other hand, if the NPV is positive without considering real options and the project has real options that would simply add more value, it is unnecessary to evaluate the options. Management should simply undertake the investment.

Capital Investments and Capital Allocation

- describe types of real options relevant to capital investments

Solution

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

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

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

Simple Linear Regression

- describe a simple linear regression model, how the least squares criterion is used to estimate regression coefficients, and the interpretation of these coefficients

Solution

A. Correct because the internal rate of return (IRR) is the discount rate that makes the net present value (NPV) equal to zero. As the NPV of Project 1 is \$0, the discount rate must be equal to its IRR. The IRR of Project 1 is the solution to the equation: $0 = -\$1,000 + \frac{\$400}{(1+IRR)^1} + \frac{\$400}{(1+IRR)^2} + \frac{\$400}{(1+IRR)^3}$, where IRR = 9.7%. Calculator solution: CF_0 = −1,000; CF_1 = 400; CF_2 = 400; CF_3 = 400; solve for IRR = 9.7%. Next, use this discount rate to calculate the NPV of Project 2; $NVP = -\$1,300 + \frac{\$500}{(1+0.097)^1} + \frac{\$500}{(1+0.097)^2} + \frac{\$500}{(1+0.097)^3} = -\$50$. Calculator solution: CF_0 = −1,300; CF_1 = 500; CF_2 = 500; CF_3 = 500; I = 9.7; solve for NPV = −50. The question can also be solved intuitively by recognizing 1) that the discount rate for Project 1 has to be positive and 2) that Project 2 has a greater initial investment (\$1,300) for the same net cash flow (\$200) as Project 1, whose NPV is \$0. Taken together, this has to result in a negative NPV for Project 2.

B. Incorrect because, although the NPV of Project 1 is \$0, the NPV of Project 2 is −\$50. A candidate may assume the NPV of both projects is \$0 because the analyst uses the same discount rate for both projects or because the projects have the same net cash flow (\$200).

C. Incorrect because the NPV of Project 2 is negative, not positive. A candidate may choose this answer because the future cash flows are greater for Project 2 or because the net cash flow (\$200) is positive.

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 increasing computing power can speed up the machine learning (ML) algorithm only. The same overfitting issue will still occur if the same ML model is used.

B. **Correct** because overfitting occurs when the ML [machine learning] model learns the input and target dataset too precisely. An ML model that has been overfitted is not able to accurately predict outcomes using a different dataset and may be too complex. When a model has been underfitted, the ML model treats true parameters as if they are noise and is not able to recognize relationships within the training data. In such cases, the model may be too simplistic. Hence, using a less complex ML model may alleviate the issue.

C. Incorrect because unsupervised learning is one of the classes of machine learning techniques. In unsupervised learning, computers are not given labeled data but instead are given only data from which the algorithm seeks to describe the data and their structure. The stem does not indicate whether a supervised or unsupervised model is being used.

Introduction to Big Data Techniques

- describe Big Data, artificial intelligence, and machine learning

Solution

A. Incorrect because it would result in a lower net profit margin since net income would drop as a result of higher depreciation expense and revenue would remain unchanged. Net profit margin = Net income / Revenue. Asset revaluations that increase the carrying amount of an asset initially increase depreciation expense, total assets, and shareholders' equity upward asset revaluations also generally decrease income (through higher depreciation expense).

B. Correct because an increase in the carrying amount of depreciable long-lived assets increases total assets and shareholders' equity, so asset revaluations that increase the carrying amount of an asset can be used to reduce reported leverage. Defining leverage as average total assets divided by average shareholders' equity, increasing both the numerator (assets) and denominator (equity) by the same amount leads to a decline in the ratio. (Mathematically, when a ratio is greater than one, as in this case, an increase in both the numerator and the denominator by the same amount leads to a decline in the ratio).

C. Incorrect because an increase in the asset carrying value results in a lower total asset turnover ratio. Total asset turnover ratio = Revenue / Average total assets. While revenue would remain unchanged, average total assets would increase therefore the total asset turnover ratio would decrease. Asset revaluations that increase the carrying amount of an asset initially increase depreciation expense, total assets, and shareholders' equity.

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 automatic stabilizers are indeed automatic, not requiring the identification of shocks to which policy makers must consider a response. They should be distinguished from discretionary fiscal policies, such as changes in government spending or tax rates, which are actively used to stabilize aggregate demand. Changing tax rates is a discretionary policy action.

B. Incorrect because automatic stabilizers are indeed automatic, not requiring the identification of shocks to which policy makers must consider a response. They should be distinguished from discretionary fiscal policies, such as changes in government spending or tax rates, which are actively used to stabilize aggregate demand. Spending on infrastructure is a discretionary policy action.

C. **Correct** because automatic stabilizers are indeed automatic, not requiring the identification of shocks to which policy makers must consider a response. They should be distinguished from discretionary fiscal policies, such as changes in government spending or tax rates, which are actively used to stabilize aggregate demand. Unemployment benefits satisfies the definition of automatic stabilizer. For example, as an economy slows and unemployment rises, government spending on unemployment benefits will also rise and add to aggregate demand. This is known as an automatic stabilizer.

Fiscal Policy

- describe tools of fiscal policy, including their advantages and disadvantages

Solution

A. Incorrect because both monetary and fiscal policies are used to regulate economic activity over time.

B. Incorrect because both monetary and fiscal policies are used to regulate economic activity over time.

C. Correct because both monetary and fiscal policies are used to regulate economic activity over time.

Fiscal Policy

- compare monetary and fiscal policy

Solution

A. **Correct** because net profit margin is calculated by dividing net income by revenue. The amount of the impairment loss will reduce the carrying amount of the asset on the balance sheet and will reduce net income on the income statement. Thus, the impairment loss will reduce net income but will have no effect on revenue, resulting in a reduction of net profit margin.

B. Incorrect because total asset turnover is calculated by dividing revenue by average total assets. The amount of the impairment loss will reduce the carrying amount of the asset on the balance sheet and will reduce net income on the income statement. Thus, the impairment loss will have no effect on revenue but will reduce total assets, resulting in an increase in total asset turnover.

C. Incorrect because working capital turnover is calculated by dividing revenue by average working capital. Working capital is defined as current assets minus current liabilities. The amount of the impairment loss will reduce the carrying amount of the asset on the balance sheet and will reduce net income on the income statement. Thus, the impairment loss although reduces total assets, does not affect current assets or revenue and therefore does not affect the working capital turnover ratio.

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 an adverse audit opinion is issued when an auditor determines that the financial statements materially depart from accounting standards and are not fairly presented.

B. **Correct** because a qualified audit opinion is one in which there is some scope limitation or exception to accounting standards.

C. Incorrect because a disclaimer of opinion occurs when, for some reason, such as a scope limitation, the auditors are unable to issue an opinion.

Introduction to Financial Statement Analysis

- describe the importance of regulatory filings, financial statement notes and supplementary information, management's commentary, and audit reports

Solution

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

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

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

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

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

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

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 corporations can borrow (issue debt) and the debt must be repaid on a pre-specified date in the future with interest. However, the directors primarily act in the best interest of shareholders.

B. Incorrect because directors (the board) appoint the managers (key executives) and managers have the primary responsibility to act in the best interest of shareholders.

C. **Correct** because directors and managers have a primary responsibility to act in the best interest of shareholders and, indirectly, all stakeholders. Further, if a board or management does not act in shareholders' best interests, shareholders can enact change through exercising voting rights attached to their shares—for example, by voting to replace the board of directors.

Organizational Forms, Corporate Issuer Features, and Ownership

- describe key features of corporate issuers

Solution

A. Incorrect because debt is a negligible component of the capital structures of most start-up companies.

B. Incorrect because many growth companies use debt conservatively in order to preserve operational and financial flexibility and minimize the risk of financial distress. Equity remains the predominant source of capital.

C. **Correct** because at the maturity stage, the company becomes able to support low-cost debt, often on an unsecured basis. From the company's perspective, debt financing is likely to be more attractive than higher-cost equity financing.

Capital Structure

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

Solution

A. Correct because real exchange rates reflect changes in relative purchasing power.

B. Incorrect because it is important to note that real exchange rates are *not* quoted or traded in global FX markets.

C. Incorrect because real exchange rates have a poor track record as a predictor of future nominal exchange rate movements.

The Foreign Exchange Market and Capital Flows

- describe the foreign exchange market, including its functions and participants, distinguish between nominal and real exchange rates, and calculate and interpret the percentage change in a currency relative to another currency

Solution

A. Incorrect because this applies to the franchisor not the franchisee. Under franchise models the franchisor earns a royalty on the franchisee's sales. The franchisor is responsible for product development and advertising, for which it often collects an additional fee from franchisees.

B. Incorrect because this applies to the franchisor not the franchisee. Under franchise models the franchisor earns a royalty on the franchisee's sales. The franchisor is responsible for product development and advertising, for which it often collects an additional fee from franchisees.

C. **Correct** because under franchise models franchisees have a tightly defined and exclusive relationship with a franchisor to operate under a specific brand with proprietary products and processes.

Business Models

- describe various types of business models

Solution

A. Incorrect because a bargain purchase results when the purchase of a company involves the purchase of net identifiable assets with a value greater than the cost to purchase. In these instances, no goodwill is created and any gain from the purchase is recognized as profit in the period during which it was earned.

B. Correct because accounting goodwill arising from an acquisition is the excess of the cost to purchase a target company over the acquired net identifiable assets (fair value of identifiable assets minus fair value of the liabilities and contingent liabilities).

C. Incorrect because when the purchase price for a company can be attributed solely to separately identifiable assets and liabilities, there is no goodwill.

Analyzing Balance Sheets

- explain the financial reporting and disclosures related to goodwill

Solution

A. Incorrect because this response applies the formula incorrectly and assumes the continuously compounded return is equal to: $r_{t,\,t+1} = \ln(S_{t+1})/\ln(S_t) - 1 = \ln(\$38)/\ln(\$30) - 1 = 1.0695 - 1 = 6.95\% \approx 7.0\%$.

B. Correct because the continuously compounded return from t to t + 1 is

$r_{t,\,t+1} = \ln(S_{t+1}/S_t) = \ln(1 + R_{t,\,t+1})$.

Therefore, the continuous compounded return from 1 January to 15 January is

$r_{1,\,20\,=} = \ln(S_{20}/S1) = \ln(\$38/\$30) = 23.64\% \approx 23.6\%$.

C. Incorrect because this response calculates the holding period return from 1 January to 15 January. That is, $S_{t+1}/S_t = 1 + R_{t,\,t+1.}$ Therefore, $R_{t,\,t+1} = S_{t+1}/S_t - 1 = \$38/\$30 - 1 = 26.67\% \approx 26.7\%$.

Rates and Returns

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

Solution

A. Incorrect because a positive move in a lagging indicator is most likely identifying an upturn in economic activity that occurred in the past.

B. **Correct** because a positive movement in a lagging indicator would most likely be used to confirm that an existing expansion is underway or has already occurred. Only a leading indicator would help identify or predict a future economic event.

C. Incorrect because a positive move in a lagging indicator by itself is insufficient to indicate a positive expansion. However, confirmation would be required from positive changes in a coincident indicator to indicate expansion.

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. Correct because the money-weighted return and its calculation are similar to the internal rate of return and the yield to maturity. Just like the internal rate of return, amounts invested are cash outflows from the investor's perspective and amounts returned or withdrawn by the investor, or the money that remains at the end of an investment cycle, is a cash inflow for the investor. The value of the fund at the end of Year 2 is 50(1.17)(1.12) + 125(1.12) = 205.52. To find the IRR -- the money-weighted return -- using a calculator: CF_0 = -50; CF_1 = -125; CF_2 = +205.52; compute IRR = 13.1785% ≈ 13.2%.

B. Incorrect because it is the time-weighted rate of return, which is calculated as the geometric mean of the two annual returns: $r = [(1 + r_1)(1 + r_2)]^{½} - 1 = [(1.17)(1.12)]^{½} - 1 = 0.1447 \approx 14.5\%$. The rounded answer is also the arithmetic mean of the two annual returns; (0.17 + 0.12)/2 = 0.145 = 14.5%.

C. Incorrect because it calculates the compound rate of return and divides it by 2: $r = [(1 + r_1)(1 + r_2) - 1]/2 = [(1.17)(1.12) - 1]/2 = 0.1552 \approx 15.5\%$.

Rates and Returns

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

Solution

A. Correct because while central banks are usually responsible for the operation of a country's monetary policy," they are not responsible for setting or implementing fiscal policy. Monetary policy refers to central bank activities that are directed toward influencing the quantity of money and credit in an economy. By contrast, fiscal policy refers to the government's decisions about taxation and spending.

B. Incorrect because perhaps the least appreciated role of a central bank is its role in the payments system. Central banks are usually asked to oversee, regulate, and set standards for a country's payments system.

C. Incorrect because most central banks will also be responsible for managing their country's foreign currency reserves and also its gold reserves.

Monetary Policy

- describe the roles and objectives of central banks

Solution

A. Incorrect because it computes the wrong locations for the first and third quartiles. The location of the first quartile (Q_1) and the third quartile (Q_3) with a sample of size 7 should be calculated as: (7 + 1)(25/100) = 2 and (7 + 1)(75/100) = 6, respectively. However, if the "+1" is omitted, the locations will be incorrectly assumed to be 7(25/100) = 1.75 and 7(75/100) = 5.25. Since these locations are not whole numbers, we must use linear interpolation. The difference between the Sharpe ratio of Portfolio 2 and Portfolio 1 is 0.5 – 0.1 = 0.4, hence the interpolated value at position 1.75 is 0.2 + (0.75)(0.4) = 0.2 + 0.3 = 0.5. Similarly, the interpolated value at position 5.25 would be 1.0 + (0.25)(1.4 – 1.0) = 1.0 + 0.1 = 1.1. Hence, IQR = $Q_3 - Q_1$ = 1.1 – 0.5 = 0.6.

B. Correct because quartiles divide the distribution into quarters and the interquartile range (IQR) is the difference between the third quartile and the first quartile, IQR = $Q_3 - Q_1$. Moreover, the location of the first quartile (Q_1) and the third quartile (Q_3) can be calculated as: (7 + 1)(25/100) = 2 and (7 + 1)(75/100) = 6, respectively. Since the portfolios are already in increasing order, the first quartile (Q_1) is given by the Sharpe ratio of Portfolio 2 and the third quartile (Q_3) by the Sharpe ratio of Portfolio 6. Hence, IQR = $Q_3 - Q_1$ = 1.4 – 0.6 = 0.8.

C. Incorrect because it is the range, rather than the interquartile range, of the Sharpe ratios. The range is the difference between the maximum and minimum values in a dataset. Hence, the range of the Sharpe ratios is 1.6 – 0.2 = 1.4.

Statistical Measures of Asset Returns

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

Solution

A. Incorrect because this distractor incorrectly interprets the debt-to-equity ratio as 50% weight for debt and 50% weight for equity. WACC $\neq w_d r_d(1 - t) + w_p r_p + w_e r_e = 0.5 \times 0.05 \times (1 - 0.30) + 0.5 \times 0.08 = 5.75\%$.

B. Correct because WACC $= w_d r_d(1 - t) + w_p r_p + w_e r_e$. Given that there is no preferred stock in the capital structure, WACC $= w_d r_d(1 - t) + w_e r_e$. Also, a simple way of transforming a debt-to-equity ratio D/E into a weight—that is, D/(D + E)—is to divide D/E by 1 + D/E. As a result, WACC $= (D/E)/[1 + (D/E)] \times r_d \times (1 - t) + 1/[1 + (D/E)] \times r_e = 0.5/(1+0.5) \times 0.05 \times (1 - 0.30) + 1/(1 + 0.5) \times 0.08 = 6.50\%$.

C. Incorrect because this distractor incorrectly omits the tax rate. WACC $\neq (D/E)/[1 + (D/E)] \times r_d + 1/[1 + (D/E)] \times r_e = 0.5/(1+0.5) \times 0.05 + 1/(1 + 0.5) \times 0.08 = 7.00\%$.

Capital Structure

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

Solution

A. Incorrect because the corporate governance committee should be composed of independent (non-executive) members only.

B. **Correct** because under good corporate governance practices the compensation committee develops remuneration policies for directors as well as key executives.

C. Incorrect because the audit committee is responsible for proposing the external auditor's remuneration.

Corporate Governance: Conflicts, Mechanisms, Risks, and Benefits

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

Solution

A. Correct because deferred tax assets arise when an excess amount is paid for income taxes (taxable income higher than accounting profit) and the company expects to recover the difference during the course of future operations.

B. Incorrect because it has the relationship reversed. Deferred tax assets arise when an excess amount is paid for income taxes (taxable income higher than accounting profit) and the company expects to recover the difference during the course of future operations.

C. Incorrect because it has the relationship reversed; when income taxes payable *exceed* income tax expense, that creates a deferred tax asset. Deferred tax assets arise when an excess amount is paid for income taxes (taxable income higher than accounting profit) and the company expects to recover the difference during the course of future operations.

Analysis of Income Taxes

- contrast accounting profit, taxable income, taxes payable, and income tax expense and temporary versus permanent differences between accounting profit and taxable income

Solution

A. Incorrect because the forward points are scaled down by 1,000 instead of 10,000: 4.6895 + (–12.7/1,000) = 4.6895 – 0.0127 = 4.67680.

B. Correct because to convert any of these quoted forward points into a forward rate, one would divide the number of points by 10,000 (to scale down to the fourth decimal place, the last decimal place in the spot quote) and then add the result to the spot exchange rate quote 4.6895 + (–12.7/10,000) = 4.6895 – 0.00127 = 4.68823.

C. Incorrect because the forward points are subtracted from the spot rate: 4.6895 – (–12.7/10,000) = 4.6895 + 0.00127 ≈ 4.69077.

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. Correct because it is the future value of the ordinary annuity: FV = $A \times [(1 + r)^N - 1]/r$ = \$10,000[(1 + 0.05)^{10} – 1]/0.05 = \$125,779. Calculator solution: [PMT] = 10,000; [N] = 10; [I/Y] = 5; [CPT] [FV] = 125,779.

B. Incorrect because it is the future value of an annuity due (not an ordinary annuity): FV of annuity due = $(1 + r) \times$ FV of ordinary annuity = (1 + 0.05) × \$125,779 = \$132,068. Compared to an ordinary annuity, the payments in an annuity due are each discounted one less period. Therefore, we can modify [the formula for the FV of an ordinary annuity] to handle annuities due by multiplying the right-hand side of the equation by $(1 + r)$. Calculator solution: in BGN mode; [PMT] = 10,000; [N] = 10; [I/Y] = 5; [CPT] [FV] = 132,068.

C. Incorrect because it assumes the investment is an 11-year (instead of a 10-year) ordinary annuity, thus calculating FV = \$10,000[(1 + 0.05)^{11} – 1]/0.05 = \$142,068. Calculator solution: [PMT] = 10,000; [N] = 11; [I/Y] = 5; [CPT] [FV] = 142,068.

Time Value of Money in Finance

- calculate and interpret the implied return of fixed-income instruments and required return and implied growth of equity instruments given the present value (PV) and cash flows

Solution

A. Correct because the more debt the company uses, the greater the cost of equity, but the total value of the company does not change and neither does the weighted average cost of capital.

B. Incorrect because the cost of equity increases. The more debt the company uses, the greater the cost of equity, but the total value of the company does not change and neither does the weighted average cost of capital.

C. Incorrect because the value of the company remains the same. The more debt the company uses, the greater the cost of equity, but the total value of the company does not change and neither does the weighted average cost of capital.

Capital Structure

- explain the Modigliani–Miller propositions regarding capital structure

Solution

A. Incorrect because an export subsidy raises the price in the domestic market by the amount of the subsidy (price before subsidy plus subsidy).

B. Incorrect because in an export subsidy, there will be an increase in domestic production.

C. **Correct** because as the price increases, domestic consumption will most likely decrease.

International Trade

- compare types of trade restrictions, such as tariffs, quotas, and export subsidies, and their economic implications

Solution

A. **Correct** because US GAAP requires that interest paid be classified as an operating cash flow; IFRS allows interest paid to be classified as either an operating or financing activity.

B. Incorrect because US GAAP requires that interest paid be classified as an operating cash flow; IFRS allows interest paid to be classified as either an operating or financing activity.

C. Incorrect because US GAAP requires that interest paid be classified as an operating cash flow; IFRS allows interest paid to be classified as either an operating or financing activity.

Analyzing Statements of Cash Flows I

- contrast cash flow statements prepared under International Financial Reporting Standards (IFRS) and US generally accepted accounting principles (US GAAP)

Solution

A. Incorrect because both ratios have improved from Year 1 to Year 2, thus the company is more solvent in Year 2

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

C. Correct because both ratios have improved from Year 1 to Year 2, thus the company is more solvent in Year 2.

	Year 1	Year 2 calculations	Year 2
Debt to capital	12.7%	2,300/(2,300 + 17,000) = 11.9%	11.9%
Interest coverage	2.9	(375 + 200 + 125)/200 = 3.5	3.5

Financial Analysis Techniques

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

Solution

A. Incorrect because increasing bank lines of credit is a primary source of liquidity.

B. Incorrect because increasing cash flow management efficiency is a primary source of liquidity.

C. **Correct** because renegotiating debt contracts is a secondary source of liquidity because it may affect the company's operating and/or financial positions.

Working Capital and Liquidity

- explain liquidity and compare issuers' liquidity levels

Solution

A. Correct. The mean absolute deviation (MAD) for a sample is calculated as follows: $\text{MAD} = \frac{\sum_{i=1}^{n}|X_i - \overline{X}|}{n}$ where

X_i = the return of the fund during year *i*

$\overline{X}$ = the mean of the returns of the sample

n = the number of returns in the sample

i = the index for the year

In this problem:

Mean: $\overline{X}$ = (−20.60% + 15.00% + 0.50% + 9.80% + 4.60%)/5 = 1.86%

Deviations from Mean	Absolute Deviation (%)
|−20.60% − 1.86%|	22.46
|15.00% − 1.86%|	13.14
|0.50% − 1.86%|	1.36
|9.80% − 1.86%|	7.94
|4.60% − 1.86%|	2.74
Total	47.64
MAD = 47.64/5	**9.53**

B. Incorrect. It uses the term "*n* − 1" in the denominator of the formula of MAD:

$\frac{\sum_{i=1}^{n}|X_i - \overline{X}|}{n}$ = 47.64%/4 = 11.91%

C. Incorrect. It is the sample standard deviation (SD):

$$\text{SD} = \sqrt[2]{\frac{\sum_{i=1}^{n}(X_i - \overline{X})^2}{n-1}}$$

= {[(−20.60% − 1.86%)^2 + (15.00% − 1.86%)^2 + (0.50% − 1.86%)^2 + (9.80% − 1.86%)^2 + (4.60% − 1.86%)^2]/4}$^{0.5}$

= 13.69%.

Statistical Measures of Asset Returns

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

Solution

A. Incorrect because this is the explanation for money-weighted return.

B. **Correct** because time-weighted rate of return reflects the compound rate of growth of one unit of currency invested over a stated measurement period, and it removes the effects of timing and amount of withdrawals and additions to the portfolio.

C. Incorrect because time-weighted rate of return can be the same, higher, or lower than money-weighted rate of return.

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 Basic EPS = Net income / Weighted average number of ordinary shares outstanding.

Year 1 = €58,000 / 635,000 ≈ 0.0913

Year 2 = €57,500 / 650,000 ≈ 0.0885

Accordingly, Basic EPS decreased from Year 1 to Year 2.

B. Correct because EBIT margin = EBIT / Total revenues.

Year 1 = €91,500 / €720,000 ≈ 12.71%

Year 2 = €93,500 / €725,000 ≈ 12.90%

Accordingly, EBIT margin increased from Year 1 to Year 2.

C. Incorrect because Net profit margin = Net income / Total revenues.

Year 1 = €58,000 / €720,000 ≈ 8.06%

Year 2 = €57,500 / €725,000 ≈ 7.93%

Accordingly, Net profit margin decreased from Year 1 to Year 2.

Financial Analysis Techniques

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

Solution

A. Incorrect because in an environment of rising inventory unit costs and constant or increasing inventory quantities, FIFO (in comparison with weighted average cost or LIFO) will allocate a lower amount of the total cost of goods available for sale to cost of sales on the income statement and a higher amount to ending inventory on the balance sheet.

B. Incorrect because in an environment of rising inventory unit costs and constant or increasing inventory quantities, FIFO (in comparison with weighted average cost or LIFO) will allocate a lower amount of the total cost of goods available for sale to cost of sales on the income statement and a higher amount to ending inventory on the balance sheet. Consequently, under LIFO the cost of sales is higher than under FIFO, which leads to a lower, not higher, gross profit margin (Gross profit / Revenue) than under FIFO.

C. **Correct** because in an environment of rising inventory unit costs and constant or increasing inventory quantities, FIFO (in comparison with weighted average cost or LIFO) will allocate a lower amount of the total cost of goods available for sale to cost of sales on the income statement and a higher amount to ending inventory on the balance sheet. Consequently, under LIFO the cost of goods sold is higher and inventory is lower, so inventory turnover (Cost of sales / Average inventory) is higher than under FIFO.

Analysis of Inventories

- calculate and explain how inflation and deflation of inventory costs affect the financial statements and ratios of companies that use different inventory valuation methods

Solution

A. Incorrect because if properly disclosed, an increase in EPS from the sale of a subsidiary does not represent low quality financial reporting, but it may be low quality earnings.

B. Correct because high financial reporting quality provides useful information to decision makers. Since foreign exchange gains and losses may not recur, they should be disclosed separately and not included in cost of goods sold.

C. Incorrect because long-term leases for customized pieces of equipment should be reported as finance leases and conforms to IFRS, therefore this is not low quality reporting.

Financial Reporting Quality

- compare financial reporting quality with the quality of reported results (including quality of earnings, cash flow, and balance sheet items)

Solution

A. Incorrect because FCFF = CFO + Int(1 – Tax rate) – FCInv.

The answer choice $460 ignores the net-of-tax interest and is calculated as $500 – $40.

B. Incorrect because it calculates FCFE. The value of $470 million is calculated as $500 – $40 + $10, which represents free cash flow to equity. FCFE = CFO – FCInv + Net borrowing.

C. **Correct** because FCFF = CFO + Int(1 – Tax rate) – FCInv. Free cash flow to the firm is calculated as $500 + $20 * (1 – 0.25) – $40 = $500 + $15 – $40 = $475.

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. Correct because if the two variables are normally distributed, we can test to determine whether the null hypothesis (H_0: ρ = 0) should be rejected. This test statistic is *t*-distributed with $n - 2$ degrees of freedom, where ρ represents the population correlation coefficient.

B. Incorrect because if the two variables are normally distributed, we can test to determine whether the null hypothesis (H_0: ρ = 0) should be rejected. This test statistic is *t*-distributed with $n - 2$ degrees of freedom.

C. Incorrect because if the two variables are normally distributed, we can test to determine whether the null hypothesis (H_0: ρ = 0) should be rejected. This test statistic is *t*-distributed with $n - 2$ degrees of freedom.

Parametric and Non-Parametric Tests of Independence

- explain parametric and nonparametric tests of the hypothesis that the population correlation coefficient equals zero, and determine whether the hypothesis is rejected at a given level of significance

Solution

A. Incorrect because it is the portfolio standard deviation calculated from an incorrect formula for portfolio variance, where the "2" is omitted from the covariance term, i.e.

$\sigma^2(R_P) = w_1^2\sigma_1^2 + w_2^2\sigma_2^2 + w_1w_2\sigma_{1,2}^2 = (½)^2(100) + (½)^2(100) + (½)(½)(50) = ¼(100 + 100 + 50) = 250/4 = 62.5$ [%^{2}], which gives a portfolio standard deviation of $\sigma(R_P) = \sqrt{(0.00625)} = 0.07906 \approx 0.079 = 7.9\%$.

B. Correct because $\sigma^2(R_P) = \Sigma_{i=1}{}^n\ \Sigma_{j=1}{}^n\ w_iw_j\mathrm{Cov}(R_i,R_j)$.

For two assets, $n = 2$, $\sigma^2(R_P) = w_1^2\sigma_1^2 + w_2^2\sigma_2^2 + 2w_1w_2\sigma_{1,2}^2$,

where, from given values, $\sigma_1^2 = \sigma_2^2 = 100\%^2$, $\sigma_{1,2}^2 = 50\%^2$.

Since the portfolio is equally weighted, $w_i = 1/n = ½$.

Hence, the portfolio variance, $\sigma^2(R_P) = (½)^2(100) + (½)^2(100) + 2(½)(½)(50) = ¼(100 + 100 + 100) = 300/4 = 75$ [%^{2}], i.e. portfolio standard deviation, $\sigma(R_P) = \sqrt{(0.0075)} = 0.08660 \approx 0.087 = 8.7\%$.

C. Incorrect because it is the portfolio variance $\sigma^2(R_P) = (½)^2(100) + (½)^2(100) + 2(½)(½)(50) = 75$ [%^{2}], incorrectly expressed in %, and not the portfolio standard deviation.

Portfolio Mathematics

- calculate and interpret the expected value, variance, standard deviation, covariances, and correlations of portfolio returns

Solution

A. Correct because cluster sampling requires the division or classification of the population into subpopulation groups, called clusters. In this method, the population is divided into clusters, each of which is essentially a mini-representation of the entire populations. Then certain clusters are chosen as a whole using simple random sampling. If a subsample is randomly selected from each selected cluster, then the plan is referred as two-stage cluster sampling. In this case, each city represents a cluster, from which a sample of ten consumers is randomly selected, i.e. the researcher uses a two-stage cluster sampling.

B. Incorrect because with systematic sampling, we select every *k*th member until we have a sample of the desired size. Systematic sampling does not involve the division or classification of the population into subpopulation groups.

C. Incorrect because a major difference between cluster and stratified random samples is that in cluster sampling, a whole cluster is regarded as a sampling unit and only sampled clusters are included. In stratified random sampling, however, all the strata are included and only specific elements within each stratum are then selected as sampling unit. Also, in stratified random sampling, the population is divided into subpopulations (strata) based on one or more classification criteria. Simple random samples are then drawn from each stratum in sizes proportional to the relative size of each stratum in the population. This would have been a stratified random sampling if the researcher randomly selected consumers from each city based on the size of each city relative to the whole population.

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 higher quantities deliver marginal revenue above marginal cost.

B. **Correct** because under perfect competition, economic profits are maximized when marginal revenue equals short-run marginal cost—in this case, marginal cost crosses $10 per unit. Profits are maximized at 23 units of production because marginal cost is in excess of marginal revenue at 24 units.

C. Incorrect because at 24 units, marginal costs exceed marginal revenue.

The Firm and Market Structures

- determine and interpret breakeven and shutdown points of production, as well as how economies and diseconomies of scale affect costs under perfect and imperfect competition

Solution

A. Correct because if the central bank wishes to increase the supply of money, it might buy bonds (usually government bonds) from the banks, with an agreement to sell them back at some time in the future. This transaction is known as a repurchase agreement.

B. Incorrect because through the setting of a policy rate, a central bank can manipulate the amount of money in the money markets. Generally speaking, the higher the policy rate, the higher the potential penalty that banks will have to pay to the central bank if they run short of liquidity, the greater their willingness to reduce lending, and the more likely that broad money growth will shrink.

C. Incorrect because a central bank could restrict money creation by raising the reserve requirements of banks.

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 employees' service costs are reported as pension expense in profit and loss.

B. **Correct** because under IFRS, the change in the net pension asset or liability each period is viewed as having three general components. Two of the components of this change are recognized as pension expense in profit and loss: (1) employees' service costs and (2) the net interest expense or income accrued on the beginning net pension asset or liability. The third item, remeasurements, is recognized in other comprehensive income.

C. Incorrect because the net interest expense or income accrued on the beginning net pension plan asset or liability is reported as pension expense in profit and loss.

Topics in Long-Term Liabilities and Equity

- explain the financial reporting of defined contribution, defined benefit, and stock-based compensation plans

Solution

A. Correct. When calculated for Year 2, interest coverage decreased and debt to total assets and return on assets both increased. In general, a decrease in interest coverage and an increase in debt to total assets would reduce creditworthiness, but an increase in return on assets would improve creditworthiness. Calculations are as follows:

	Calculation	Year 2	Comment
Debt to total assets	Total debt/Total assets = €1,048/€5,305 =	19.8%	Higher than year 1(18.2%), which would reduce creditworthiness
Interest coverage	EBIT/Interest payments = €1,015/€73.4 =	13.8×	Lower than Year 1(15.3×), which would reduce creditworthiness
Operating ROA	EBIT/Average total assets = €1,015/€5,421 =	18.7%	**Higher than year 1 (17.3%), which would improve creditworthiness**

B. Incorrect because a decrease in the interest coverage ratio would likely reduce creditworthiness.

C. Incorrect because an increase in debt-to-total assets would likely reduce creditworthiness.

Financial Analysis Techniques

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

Solution

A. Correct because energy efficiency is best described as an environmental factor. Environmental factors that are generally considered material in investment analysis include natural resource management, pollution prevention, water conservation, energy efficiency and reduced emissions, the existence of carbon assets, and adherence to environmental safety and regulatory standards.

B. Incorrect because energy efficiency is best described as an environmental factor, not a social factor.

C. Incorrect because energy efficiency is best described as an environmental factor, not a governance factor.

Investors and Other Stakeholders

- describe environmental, social, and governance factors of corporate issuers considered by investors

Solution

A. Correct because the target D/E ratio is used to determine WACC. The target capital structure is the company's chosen proportions of debt and equity as opposed to the actual weightings. If we know the company's target capital structure, then of course we should use this in our analysis.

Weight of debt, $w_d = (D/E)/(1+(D/E)) = 0.8/(1+0.8) = 0.4444$

Weight of equity, $w_e = 1–w_d = 0.5556$

$WACC = w_d r_d(1 – t) + w_p r_p + w_e r_e=(0.4444)(4\%)(1–30\%)+0+(0.5556)(9\%) = 6.2444\% \approx 6.24\%$

where

w_d = the target proportion of debt in the capital structure when the company raises new funds

r_d = the before-tax marginal cost of debt

t = the company's marginal tax rate

w_p = the target proportion of preferred stock in the capital structure when the company raises new funds

r_p = the marginal cost of preferred stock

w_e = the target proportion of common stock in the capital structure when the company raises new funds

r_e = the marginal cost of common stock

B. Incorrect because the current capital structure (determined by using the current D/E ratio) was used instead of the target capital structure. The target capital structure is the company's chosen proportions of debt and equity as opposed to the actual weightings. If we know the company's target capital structure, then of course we should use this in our analysis.

Weight of equity, $w_e \neq (D/E)/(1+(D/E)) = 0.65/(1+0.65) = 0.3939$

Weight of debt, $w_d \neq 1–w_d = 0.6061$

$WACC \neq (0.3939)(4\%)(1–30\%)+(0.6061)(9\%) = 6.5576\% \approx 6.56\%$

C. Incorrect because the tax shield was not applied to the weighted cost of debt in the WACC formula.

Weight of debt, $w_d = (D/E)/(1+(D/E)) = 0.8/(1+0.8) = 0.4444$

Weight of equity, $w_e = 1–w_d = 0.5556$

$WACC \neq (0.4444)(4\%)+(0.5556)(9\%) = 6.7778\% \approx 6.78\%$

Capital Structure

- describe optimal and target capital structures

Solution

A. Correct because 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 realizable value and the loss (reduction in value) recognized as an expense on the income statement.

B. Incorrect because 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 realizable value and the loss (reduction in value) recognized as an expense on the income statement. Also, the revaluation surplus account is used under the revaluation model for long-lived assets (and not inventory). Thus, IFRS allow companies to value long-lived assets either under a cost model at historical cost minus accumulated depreciation or amortisation or under a revaluation model at fair value if a revaluation initially increases the carrying amount of the asset class, the increase in the carrying amount of the asset class bypasses the income statement and goes directly to equity under the heading of revaluation surplus. Any subsequent decrease in the asset's value first decreases the revaluation surplus and then goes to income.

C. Incorrect because 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 realizable value and the loss (reduction in value) recognized as an expense on the income statement. Also, in case an inventory valuation allowance is used, its balance should increase (and not decrease) because frequently, rather than writing inventory down directly, an inventory valuation allowance account is used. The allowance account is netted with the inventory accounts to arrive at the carrying amount that appears on the balance sheet.

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 World Bank helps to create the basic economic infrastructure that is essential for the creation of domestic financial markets and a well-functioning financial industry in developing countries.

B. Incorrect because the WTO's (World Trade Organization's) most important functions are the implementation, administration, and operation of individual agreements; acting as a platform for negotiations; and settling disputes. The WTO's primary focus is the promotion of international free trade, not creating basic economic infrastructure.

C. Incorrect because the focus of the International Monetary Fund (IMF) is more short term, such as supporting exchange-rate flexibility and lending money on a temporary basis. Basic economic infrastructure issues are not the IMF's focus.

Introduction to Geopolitics

- describe functions and objectives of the international organizations that facilitate trade, including the World Bank, the International Monetary Fund, and the World Trade Organization

Solution

A. Incorrect because, if the null hypothesis is rejected, the evidence is statistically significant.

B. Incorrect because when we want to conduct tests on two means based on samples that we believe are dependent, we use the test of the mean of the differences(a paired comparisons test). Therefore, it is not used to test whether samples are dependent or independent.

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

Hypothesis Testing

- construct hypothesis tests and determine their statistical significance, the associated Type I and Type II errors, and power of the test given a significance level

Solution

A. Incorrect because just like the concentration ratio, the HHI does not take the possibility of entry into account.

B. Incorrect because just like the concentration ratio, the HHI does not take the possibility of entry into account.

C. Correct because just like the concentration ratio, the HHI does not take the possibility of entry into account.

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 the purchase of equipment is a cash flow from investing activities, not an operating cash flow. Investing activities include purchasing and selling long-term assets and other investments. These long-term assets and other investments include property, plant, and equipment.

B. Correct, because a decrease in current operating liabilities (e.g., accounts payable and accrued expense liabilities) is a subtraction from net income using the indirect method.

C. Incorrect, because amortization expense of intangible assets is an addition to net income using the indirect method.

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 because Bayes' formula is misapplied as Probability of *X* given the new information = Probability of the new information given *X* / Prior probability of *X* × Unconditional probability of the new information, 0.5/0.7 × 0.6 = 0.4286 ≈ 0.43.

B. Correct because applying Bayes' formula, Probability of *X* given the new information = Probability of the new information given *X* / Unconditional probability of the new information × Prior probability of *X*, results in 0.5/0.6 × 0.7 = 0.5833 ≈ 0.58.

C. Incorrect because Bayes' formula is misapplied as Probability of *X* given the new information = Unconditional probability of the new information / Probability of the new information given *X* × Prior probability of *X*, 0.6/0.5 × 0.7 = 0.84.

Probability Trees and Conditional Expectations

- calculate and interpret an updated probability in an investment setting using Bayes' formula

Solution

A. Incorrect because if an executive remuneration plan offers cash only, the interests of management and investors (and other stakeholders) may be misaligned. An equity-based compensation plan is commonly used to align management interests with those of shareholders. Therefore, deferred shares, i.e., equity, can be employed to align management interests with those of shareholders.

B. Correct because by allowing shareholders to express their views on remuneration matters, companies can limit the discretion of directors and managers in granting themselves excessive (or inadequate) remuneration, thus not allowing managers to have greater discretion over their own pay. Hence, if shareholders do not or miss to influence the design of executive compensation packages, conflicts of interest between shareholders and management may occur.

C. Incorrect because while management compensation seeks to motivate managers to maximize shareholder value, manager and shareholder interests may diverge as it relates to risk appetite. Compensation dominated by stock grants and options can motivate excessive management risk-taking, as option holders participate only in upside share price moves. Similarly, little or no use of stock grants and options in compensation plans can lead to unduly risk-averse corporate decision-making and the inability to attract talent. This misalignment may be at odds with the company's value creation objective or shareholders' desire for higher-risk, higher-reward endeavors. Since investors can hold diversified portfolios, they may have a higher risk tolerance than managers, whose reputation and time are concentrated in a single company. In other words, when risky projects that match shareholders' risk tolerance are pursued by the company, there is no conflict of interest between shareholders and management.

Corporate Governance: Conflicts, Mechanisms, Risks, and Benefits

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