

Level I of the CFA® 2025 Exam

Questions with Answers - Portfolio Management

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Table of Contents

1	- Portfolio Risk & Return: Part I	38
2	- Portfolio Risk & Return: Part II	93
3	- Portfolio Management: An Overview	94
4	- Basics of Portfolio Planning & Construction	160
5	- The Behavioral Biases of Individuals	161
6	- Introduction to Risk Management	181

Learning Module 1: Portfolio Risk & Return: Part I

Q.129 Stock ABC's expected return is 7% with a standard deviation of 14%. Stock XYZ's expected return is 11% with a standard deviation of 23%.

Given that the correlation coefficient between ABC and XYZ is 0.4 and that you want to invest 35% of your money in stock ABC and 65% in stock XYZ, the standard deviation of your portfolio will be *closest to*:

- A. 16.87%.
- B. 17.50%.
- C. 8.43%.

The correct answer is **B**.

$$\text{Standard deviation of portfolio} = [w_A^2 \times s_{(RA)}^2 + w_B^2 \times s_{(RB)}^2 + 2 \times (w_A) \times (w_B) \times \text{Cov}(RA, RB)]^{1/2}$$

$$\text{Standard deviation of portfolio} = [(0.35)^2(0.14)^2 + (0.65)^2(0.23)^2 + 2(0.35)(0.65)(0.14)(0.23)(0.4)]^{1/2}$$

$$\text{Standard deviation of portfolio} = [(0.1225)(0.0196) + (0.4225)(0.0529) + 2(0.00293)]^{1/2}$$

$$\text{Standard deviation of portfolio} = [0.002401 + 0.02235 + 0.00586]^{1/2}$$

$$\text{Standard deviation of portfolio} = [0.030611]^{1/2} = 17.50\%$$

A is incorrect. The calculation for 16.87% does not correctly apply the formula for the standard deviation of a portfolio. The precise calculation, as shown above, yields a result of 17.50%.

C is incorrect. The value of 8.43% significantly underestimates the risk (standard deviation) of the portfolio. It ignores the compounded effect of the individual securities' volatilities and their correlation, leading to a substantial underestimation of the portfolio's standard deviation.

CFA Level 1, Portfolio Management, Learning Module 1: Portfolio Risk and Return: Part I, LOS (e) Calculate and interpret portfolio standard deviation.

Q.132 A portfolio is composed of 60% equities and 40% bonds. The variance of equities is 320, the variance of bonds is 110, and the covariance is 90. The portfolio's variance is *closest to*:

- A. 154.4.
- B. 176.
- C. 279.2.

The correct answer is **B**.

$$\text{Portfolio variance} = w_A^2 \times s^2(R_A) + w_B^2 \times s^2(R_B) + 2 \times (w_A) \times (w_B) \times \text{Cov}(R_A, R_B)$$

$$\text{Portfolio variance} = (0.6)^2 \times (320) + (0.4)^2 \times (110) + 2 \times (0.6) \times (0.4) \times (90)$$

$$\text{Portfolio variance} = 115.2 + 17.6 + 43.2 = 176$$

A is incorrect. The calculation that leads to 154.4 does not correctly apply the formula for portfolio variance. It likely results from an incorrect application of weights, variances, or the covariance between the assets.

C is incorrect. The value of 279.2 significantly overestimates the portfolio's variance.

CFA Level 1, Portfolio Management, Learning Module 1: Portfolio Risk and Return: Part I, LOS (d) Calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data.

Q.133 Investor A has a lower risk aversion than Investor B, and Investor C has a lower risk tolerance than Investor B. Which investor's optimal portfolio will *most likely* have the highest expected return on the capital allocation line?

- A. Investor A's optimal portfolio
- B. Investor B's optimal portfolio
- C. Investor C's optimal portfolio

The correct answer is **A**.

Investor A will most likely take more risk than Investor B, and Investor B will most likely take more risk than Investor C. Therefore, Investor A's optimal portfolio will have the highest expected return.

B is incorrect. While Investor B is more risk-averse than Investor A but less so than Investor C, this middle position in terms of risk tolerance does not necessarily mean their optimal portfolio will have the highest expected return. The relationship between risk aversion and expected return is such that lower risk aversion is associated with a willingness to invest in portfolios with higher expected returns despite the increased risk. Therefore, Investor B, being more risk-averse than Investor A, is less likely to choose a portfolio with the highest expected return compared to Investor A.

C is incorrect. Given that Investor C has the lowest risk tolerance among the three, they are most likely to opt for a portfolio with lower expected returns that align with their lower tolerance for risk. The principle of risk aversion in investment theory suggests that investors with lower risk tolerance prefer to minimize risk, even at the expense of forgoing potentially higher returns. Thus, Investor C's optimal portfolio would be positioned towards the left on the CAL, where portfolios offer lower expected returns in exchange for reduced risk, making it unlikely for their portfolio to have the highest expected return.

CFA Level 1, Portfolio Management, Learning Module 1: Portfolio Risk and Return: Part I, LOS (b) Explain risk aversion and its implications for portfolio selection.

Q.137 Which of the following statements regarding the real risk-free rate of return is *least likely* accurate?

- A. The real risk-free rate of return is the minimum an investor requires.
- B. You don't need the inflation rate to calculate the real risk-free rate of return.
- C. The real risk-free rate of return does not take into account the capital market environment.

The correct answer is **B**.

The inflation rate is needed to calculate the real risk-free rate<

$$R_f = \frac{(1 + \text{nominal free rate})}{(1 + \text{inflation rate})} - 1$$

A is incorrect. The real risk-free rate is indeed a baseline for what investors might expect for taking no risk, assuming no inflation. However, investors typically require a premium above the real risk-free rate to compensate for various risks (inflation, default, liquidity, etc.) associated with different investments. Therefore, while the real risk-free rate is a component of the minimum return investors seek, it is not the complete picture.

C is incorrect. While the real risk-free rate is primarily concerned with inflation adjustment, it is indirectly influenced by the capital market environment. Factors such as monetary policy, economic growth, and investor sentiment, which are part of the capital market environment, can affect inflation rates and, consequently, the real risk-free rate. However, the statement is misleading in suggesting that the real risk-free rate is entirely detached from the broader economic and financial ecosystem.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS 1c: explain the selection of an optimal portfolio, given an investor's utility (or risk aversion) and the capital allocation line

Q.757 The standard deviation of return of an equally weighted investment portfolio in various securities is *most likely*:

- A. Equal to the average of the standard deviation of the individual securities.
- B. Less than the average of the standard deviation of the individual securities.
- C. More than the average of the standard deviation of the individual securities.

The correct answer is **B**.

The standard deviation of an equally weighted investment portfolio offers a lower standard deviation than the average of its individual components due to the correlations or interactions between the individual securities.

A is incorrect. It suggests that the standard deviation of an equally weighted investment portfolio is equal to the average of the standard deviation of the individual securities. This overlooks the critical role of diversification and correlation in reducing portfolio risk. The mere averaging of individual securities' standard deviations does not capture the complex interactions between the returns of those securities that can lead to risk reduction.

C is incorrect. It implies that the standard deviation of an equally weighted investment portfolio is more than the average of the standard deviation of the individual securities. This would only be the case in portfolios composed of perfectly positively correlated securities ($\rho = 1$), which is an unrealistic scenario in practical investment settings. In reality, securities exhibit varying degrees of correlation, and diversification typically leads to a reduction in the portfolio's overall risk, contrary to what option C suggests.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Management: An Overview. LOS 1e: calculate and interpret portfolio standard deviation.

Q.771 Alan West, a portfolio manager, created the following portfolio:

Security	Security Weight (%)	Expected Standard deviation(%)
A	20	4
B	80	10

If the correlation of returns between the two securities is 0.60, then the expected standard deviation of the portfolio is *closest to*:

- A. 9.50%.
- B. 8.10%.
- C. 8.50%.

The correct answer is **C**.

$$\text{Standard deviation of portfolio} = [(0.2)^2(4\%)^2 + (0.8)^2(10\%)^2 + 2(0.2)(0.8)(0.6)(4\%)(10\%)]^{0.5}$$

$$\text{Standard deviation of portfolio} = 8.50\%$$

A is incorrect. Suggesting that the expected standard deviation of the portfolio is 9.50% overlooks the correct application of the formula for calculating the portfolio's standard deviation, which accounts for the weights of the securities, their individual standard deviations, and the correlation between their returns. The correct calculation yields an expected standard deviation of 8.50%.

B is incorrect. It might result from miscalculating the weights, standard deviations, or the correlation coefficient's impact on the portfolio's overall risk. The accurate calculation, as shown, results in an expected standard deviation of 8.50%.

CFA Level 1, Portfolio Management, Learning Module 1: Portfolio Risk and Return: Part I, LOS (e) Calculate and interpret portfolio standard deviation.

Q.772 Raul Perez, a portfolio manager, created the following portfolio:

Security	Security Weight (%)	Expected Standard deviation(%)
A	40	7
B	60	12

If the covariance of returns between the two securities is -0.004, then the expected standard deviation of the portfolio would be :

- A. 6.36%.
- B. 6.56%.
- C. 6.10%.

The correct answer is **A**.

The formula for the standard deviation of a two-asset portfolio is indeed as follows:

$$\sigma_p^2 = w_1^2 \sigma_1^2 + w_2^2 \sigma_2^2 + 2w_1 w_2 \text{Cov}(R_1, R_2)$$

Where:

σ_p^2 = variance of the portfolio.

w_1 and w_2 = weights of the two securities in the portfolio.

σ_1 and σ_2 = respective standard deviations of the two securities.

$\text{Cov}(R_1, R_2)$ = covariance between the returns of the two securities.

Therefore,

$$\sigma_p^2 = (0.4)^2(7\%)^2 + (0.6)^2(12\%)^2 + 2(0.4)(0.6)(-0.004) = 0.004048$$

The standard deviation of the portfolio (σ_p) is the square root of 0.004048, which is approximately 0.0636 or 6.36%.

B is incorrect. An answer of 6.56% would suggest either a miscalculation or incorrect assumptions about the weights, standard deviations, or covariance of the securities in the portfolio. The precise calculation based on the given data results in a standard deviation of approximately 6.36%, not 6.56%.

C is incorrect. An answer of 6.10% would also indicate a misunderstanding or miscalculation of the portfolio's risk.

CFA Level 1, Portfolio Management, Learning Module 1: Portfolio Risk and Return: Part I, LOS (e) Calculate and interpret portfolio standard deviation.

Q.774 Tina Fer, a portfolio manager, created the following portfolio:

Security	Security Weight (%)	Expected Standard deviation(%)
A	10	6
B	90	15

If the standard deviation of the portfolio is 14.1%, then the covariance between the two securities is *closest to*:

- A. 0.0008.
- B. 0.0009.
- C. 0.0090.

The correct answer is **C**.

A portfolio's standard deviation of 14.10% is the weighted average, which is possible only if the correlation between the securities is equal to 1.0. If the correlation coefficient is equal to 1.0, then the covariance is calculated with the following formula:

$$(1)(6\%) (15\%) = 0.0090$$

Note: You could also isolate covariance in the following formula and would come up with the same answer:

$$\sigma_p^2 = w_1^2 \sigma_1^2 + w_2^2 \sigma_2^2 + 2w_1 w_2 \text{Cov}(R_1, R_2)$$

A is incorrect. A covariance of 0.0008 would suggest a much weaker relationship between the returns of securities A and B than what is implied by the given portfolio standard deviation of 14.1%. This underestimation does not accurately reflect the dynamics of the portfolio's risk profile.

B is incorrect. This option slightly underestimates the degree to which the returns of the two securities move together within the portfolio.

CFA Level 1, Portfolio Management, Learning Module 1: Portfolio Risk and Return: Part I, LOS (e) Calculate and interpret portfolio standard deviation.

Q.775 Doug Smith, a portfolio manager, created the following portfolio:

Security	Expected Return (%)	Expected Standard Deviation(%)
A	18	12
B	15	10

If the portfolio of the two securities has an expected return of 16%, the proportion invested in Security A is *closest to*:

- A. 33%.
- B. 67%.
- C. 133%.

The correct answer is **A**.

To solve this question, we can use the formula for the expected return of a portfolio. The expected return of a portfolio is the weighted average of the expected returns of the individual securities in the portfolio. Let W_A represent the weight of Security A in the portfolio, and $W_B = 1 - W_A$ represent the weight of Security B (since the total weight must sum up to 1).

The formula for the expected return of the portfolio is given by:

$$16\% = W_A \times 18\% + (1 - W_A) \times 15\%$$

We can solve for W_A as follows:

$$\begin{aligned}16\% &= W_A \times 18\% + (1 - W_A) \times 15\% \\16\% &= 18\% \times W_A + 15\% - 15\% \times W_A \\16\% &= 3\% \times W_A + 15\% \\1\% &= 3\% \times W_A \\W_A &= \frac{1\%}{3\%} \\W_A &= \frac{1}{3} \text{ or approximately } 33\%\end{aligned}$$

B is incorrect. A calculation suggesting 67% investment in Security A would imply a higher expected return than 16%, given that Security A has a higher expected return (18%) than Security B (15%). The weight of Security A in the portfolio is calculated based on the desired portfolio return, which in this case is closer to the return of Security B, indicating a lower weight in Security A.

C is incorrect. A proportion of 133% suggests leveraging or borrowing to invest more than the total portfolio value in Security A, which is not implied by the given information. The question asks for the proportion of the portfolio invested in Security A to achieve a specific expected return, not leveraging strategies. Moreover, a proportion greater than 100% is not feasible in the context of this question, which deals with the allocation between two securities within a portfolio without considering borrowing or leveraging.

CFA Level 1, Portfolio Management, Learning Module 1: Portfolio Risk and Return: Part I, LOS (c) Explain the selection of an optimal portfolio, given an investor's utility (or risk aversion) and the capital allocation line.

Q.776 Carla Mayes, a portfolio manager, created the following portfolio:

Security	Expected Return (%)	Expected Standard Deviation(%)
A	5	8
B	10	14

If the correlation of returns between the two securities is -0.20, the expected standard deviation of a portfolio invested 75% in Security A and 25% in Security B is *closest to*:

- A. 5.31%.
- B. 6.81%.
- C. 6.31%.

The correct answer is **C**.

$$\begin{aligned}\sigma_p^2 &= w_1^2 \sigma_1^2 + w_2^2 \sigma_2^2 + 2w_1 w_2 \rho_{12} \sigma_1 \sigma_2 \\ &= [(0.75)^2 (8\%)^2 + (0.25)^2 (14\%)^2 + 2(0.75)(0.25)(-0.20)(8\%)(14\%)]^{0.5} \\ &= 6.31\%\end{aligned}$$

A is incorrect. It likely omits the covariance term or miscalculates the weights and standard deviations of the individual securities.

B is incorrect. The calculation that leads to 5.31% does not correctly apply the formula for the portfolio's standard deviation. It likely omits the covariance term or miscalculates the weights and standard deviations of the individual securities.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I.
LOS e: calculate and interpret portfolio standard deviation.

Q.777 Kate Reiners, a portfolio manager, created the following portfolio:

Security	Expected Return (%)	Expected Standard Deviation(%)
A	11	9
B	18	16

If the two securities are uncorrelated, the expected standard deviation of this equal-weighted portfolio is *closest to*:

- A. 9.18%.
- B. 9.81%.
- C. 8.91%.

The correct answer is **A**.

$$\begin{aligned}\text{Portfolio variance} &= w_X^2 \sigma_X^2 + w_Y^2 \sigma_Y^2 + 2w_X w_Y \sigma_X \sigma_Y \rho_{XY} \\ &= \sqrt{(0.5)^2(0.09)^2 + (0.5)^2(0.16)^2 + 2(0.5)(0.5)(0.00)(0.09)(0.16)} \\ &= 0.0918 \quad (\text{or } 9.18\%) \end{aligned}$$

B is incorrect. The calculation that leads to 9.81% likely involves a misunderstanding of the formula for combining standard deviations or an incorrect application of the weights or the correlation coefficient.

C is incorrect. The value of 8.91% does not correctly follow from the application of the formula for the standard deviation of a portfolio consisting of uncorrelated securities.

CFA Level 1, Portfolio Management, Learning Module 1: Portfolio Risk and Return: Part I, LOS (c) Explain the selection of an optimal portfolio, given an investor's utility (or risk aversion) and the capital allocation line.

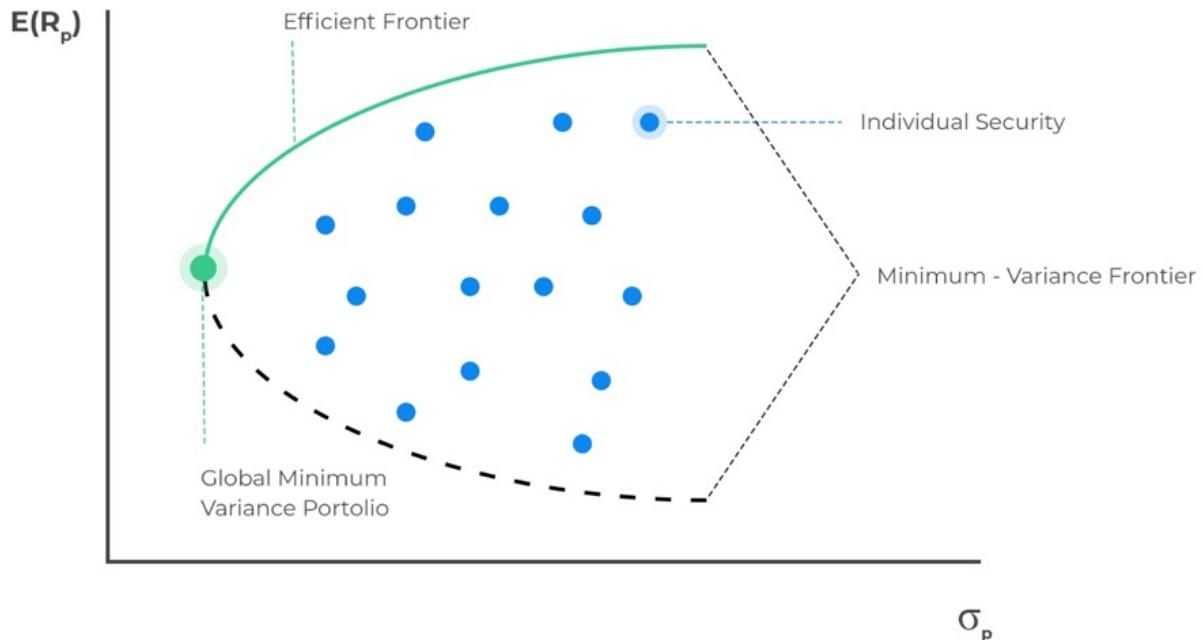
Q.779 Which of the following curve is referred to as the Markowitz efficient frontier?

- A. The curve that lies below and to the left of the global minimum-variance portfolio.
- B. The curve that lies above and to the right of the global minimum-variance portfolio.
- C. The curve that lies above and to the left of the global minimum-variance portfolio.

The correct answer is **B**.



Global Minimum Variance Portfolio



The curve (shown as the green line) that lies above and to the right of the global minimum-variance portfolio (shown as the green dot) is referred to as the Markowitz efficient frontier. It contains all portfolios of risky assets that rational, risk-averse investors will choose.

A is incorrect. They offer lower returns for a given level of risk or higher risk for a given level of return. Rational investors, seeking to maximize their utility, would not choose portfolios in this region as they can achieve better outcomes by selecting portfolios on the efficient frontier.

C is incorrect. The curve that lies above and to the left of the global minimum-variance portfolio does not exist within the context of the Markowitz portfolio theory. The global minimum-variance portfolio itself is the leftmost point of the efficient frontier, meaning there are no portfolios that offer a higher return for less risk than this point. Any portfolio that would hypothetically lie above and to the left of the global minimum-variance portfolio would imply a risk-return combination that is unattainable under the assumptions of the Markowitz framework, which includes the idea that higher returns come with higher risk.

CFA Level 1, Portfolio Management, Learning Module 1: Portfolio Risk and Return: Part I, LOS (g) Describe and interpret the minimum-variance and efficient frontiers of risky assets and the global minimum-variance portfolio.

Q.780 Which of the following statements is *most* accurate in the context of the minimum-variance frontier?

- A. A risk-averse investor will always choose to invest in a portfolio that lies on the right to the minimum-variance frontier.
- B. A risk-averse investor will always choose to invest in a portfolio that lies on the minimum-variance frontier.
- C. Neither of the above.

The correct answer is **B**.

The minimum-variance frontier represents a set of portfolios that offer the lowest level of risk (variance) for a given level of expected return. For a risk-averse investor, who prioritizes minimizing risk over maximizing returns, choosing a portfolio on the minimum-variance frontier is the most rational decision. This is because any portfolio on this frontier provides the best possible expected return for a given amount of risk. Therefore, it is most accurate to say that a risk-averse investor will always choose to invest in a portfolio that lies on the minimum-variance frontier.

A is incorrect. Suggesting that a risk-averse investor will always choose to invest in a portfolio that lies to the right of the minimum-variance frontier is misleading. Portfolios to the right of the minimum-variance frontier typically involve higher levels of risk for potentially higher returns. A risk-averse investor, by definition, seeks to minimize risk, not necessarily to maximize returns at the cost of taking on more risk. Therefore, such an investor would prefer portfolios on the minimum-variance frontier itself, where the risk is minimized for any level of expected return, rather than opting for higher-risk options to the right of the frontier.

C is incorrect. As explained, the minimum-variance frontier is precisely where a risk-averse investor would look to invest. Portfolios on this frontier offer the lowest possible risk for a given level of expected return, aligning perfectly with the preferences of a risk-averse investor. Therefore, stating that neither of the provided options is accurate overlooks the fundamental principle of risk aversion in investment strategy.

CFA Level 1, Portfolio Management, Learning Module 1: Portfolio Risk and Return: Part I, LOS (g) Describe and interpret the minimum-variance and efficient frontiers of risky assets and the global minimum-variance portfolio.

Q.798 According to the capital market theory, the optimal risky portfolio:

- A. Has the highest expected return
- B. Is the market portfolio
- C. Has the lowest expected variance

The correct answer is **B**.

The capital market theory assumes that investors employ a uniform approach while assessing various assets on the market. It assumes that all investors have homogeneous expectations and use the same probability distributions, inputs, and the same analytical methodologies. As a result, their valuations are identical, and all of them invest in the optimal risk portfolio - the market portfolio.

A is incorrect. While it is true that investors seek portfolios with high expected returns, the highest expected return alone does not define the optimal risky portfolio. According to the capital market theory, the optimal portfolio must also consider the risk associated with achieving these returns. A portfolio with the highest expected return but unacceptable levels of risk would not be considered optimal. The theory emphasizes the importance of balancing expected returns with risk, aiming for the portfolio that offers the best risk-return trade-off, which is embodied by the market portfolio.

C is incorrect. Although minimizing expected variance (or risk) is a critical consideration in portfolio selection, the optimal risky portfolio is not simply the one with the lowest expected variance. If this were the case, the optimal portfolio would consist entirely of risk-free assets, which is not realistic or desirable for most investors seeking higher returns. The capital market theory suggests that the optimal portfolio is one that efficiently balances expected return and risk, which is achieved through diversification. The market portfolio, being fully diversified, effectively spreads out risk while still offering a favorable expected return, making it the optimal choice according to the theory.

C is incorrect. The value of 8.91% does not correctly follow from the application of the formula for the standard deviation of a portfolio consisting of uncorrelated securities.

CFA Level 1, Portfolio Management, Learning Module 1: Portfolio Risk and Return: Part I, LOS (c) Explain the selection of an optimal portfolio, given an investor's utility (or risk aversion) and the capital allocation line.

Q.1299 Calculate the standard deviation of two equally weighted risky assets in a portfolio if the standard deviations of the two assets are 12% and 15% and the correlation between the two assets is 0.5.

- A. 11.71%
- B. 1.37%
- C. 13.37%

The correct answer is **A**.

$$\text{Portfolio variance} = w_X^2 \sigma_X^2 + w_Y^2 \sigma_Y^2 + 2w_X w_Y \sigma_X \sigma_Y \rho_{XY}$$

$$\text{Portfolio variance} \sigma_p = ((0.12^2 \times 0.5^2) + (0.15^2 \times 0.5^2) + (2 \times 0.12 \times 0.15 \times 0.5 \times 0.5 \times 0.5))^{0.5} = 11.$$

B is incorrect. 1.37% significantly underestimates the risk of the portfolio.

C is incorrect. 13.37% overestimates the portfolio's risk.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS e: Calculate and interpret portfolio standard deviation.

Q.1300 What does the utility function represent?

- A. Investors preference in terms of risk and return
- B. Different combinations of risk and return
- C. Minimum variance portfolios

The correct answer is **A**.

The utility function represents the investor's preference in terms of risk and return. The utility function helps in understanding the trade-offs investors are willing to make between the potential for higher returns and the risk of achieving those returns. Essentially, it quantifies the satisfaction or utility an investor expects to derive from different investment choices, considering both the expected return and the associated risk.

B is incorrect. While the utility function does indeed take into account risk and return, its primary purpose is not to enumerate possible combinations but to express the investor's preferences among those combinations. The utility function is more about the subjective valuation of risk-return trade-offs rather than an objective mapping of all possible risk-return scenarios.

C is incorrect. This option mistakenly identifies the utility function as representing minimum variance portfolios. Minimum variance portfolios are a concept in portfolio theory that focuses on constructing a portfolio with the lowest possible risk (variance) for a given level of expected return. Although the utility function considers risk (which includes variance), it is not limited to the concept of minimizing variance. Instead, it encompasses a broader perspective on how investors evaluate risk in relation to return, which may or may not align with the goal of achieving a minimum variance portfolio.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I.
LOS c: Explain the selection of an optimal portfolio, given an investor's utility (or risk aversion) and the capital allocation line.

Q.1301 Which of the following indifference curves will a risk-averse investor have?

- A. An upward-sloping curve
- B. A downward-sloping curve
- C. A downward straight line

The correct answer is **A**.

A risk-averse investor will have an upward-sloping curve because he will only take additional risk for additional returns. This is because a risk-averse individual requires higher returns to compensate for any additional risk they take on. For a risk-averse investor, the willingness to accept higher risk is only present if it is accompanied by a proportionately higher expected return.

B is incorrect. A downward-sloping curve would suggest that an investor is willing to accept lower returns for higher levels of risk, which contradicts the fundamental behavior of a risk-averse investor. Risk-averse individuals seek to maximize their returns for a given level of risk or minimize their risk for a given level of return. Therefore, a downward-sloping curve does not accurately represent the preferences of a risk-averse investor.

C is incorrect. A downward straight line would imply a constant trade-off between risk and return, regardless of the level of risk involved. This does not accurately reflect the behavior of risk-averse investors, who require increasingly higher returns to compensate for additional units of risk. The straight line suggests a linear relationship between risk and return, which oversimplifies the complex decision-making process of risk-averse investors. In reality, the trade-off between risk and return is not linear, and the curvature of the indifference curve reflects the varying degrees of risk aversion among investors.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I.
LOS b: explain risk aversion and its implications for portfolio selection.

Q.1302 Which of the following statements is *most* accurate about correlations?

- A. The higher the correlation between assets, the higher the diversification benefit.
- B. The lower the correlation between assets, the lower the diversification benefit.
- C. The higher the correlation between assets, the lower the diversification benefit.

The correct answer is **C**.

A high correlation between assets creates lower diversification benefits. If the correlation is negative, the portfolio risk can be eliminated. When assets have a high positive correlation, they tend to move in the same direction under similar market conditions. This similarity in movement means that when one asset experiences a downturn, the other is likely to do the same, thereby offering little to no risk reduction through diversification.

A is incorrect. It suggests that higher correlation between assets leads to higher diversification benefits, which is a misunderstanding of the concept of diversification. In reality, the opposite is true. Higher correlation between assets means their returns move more closely together, which reduces the potential for risk reduction through diversification. In extreme cases, if two assets have a correlation of 1, combining them in a portfolio offers no diversification benefit at all, as they would respond identically to market conditions.

B is incorrect. It means the assets' returns do not move in tandem. This lack of synchronicity allows for the smoothing of portfolio returns over time, as the negative performance of some assets can be compensated by the positive performance of others, thereby enhancing the portfolio's risk-adjusted return.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I.
LOS (f): Describe the effect on a portfolio's risk of investing in assets that are less than perfectly correlated.

Q.1304 Which of the following is *least likely* correct about the coefficient of correlation?

- A. A correlation of zero means there is no linear relationship between two stocks.
- B. A correlation of -1 means the two stock returns are always proportional in opposite directions.
- C. A correlation of 3 means the two stock returns are always proportional in the same direction.

The correct answer is **C**.

The least likely correct statement about the coefficient of correlation is option C.

A correlation coefficient is a number between -1 and 1 that tells you the strength and direction of a relationship between variables. A correlation of zero means there is no linear relationship between two variables. A correlation of -1 means the two variables are perfectly negatively correlated, which implies that when one variable increases, the other variable decreases proportionally. However, a correlation of 3 is not possible since the correlation coefficient ranges from -1 to 1.

A is incorrect. The statement that a correlation of zero means there is no linear relationship between two stocks is accurate. A zero correlation indicates that there is no linear dependency between the movements of the two stocks. However, it's important to note that this does not imply there is no relationship at all between the two variables; they could have a non-linear relationship that the correlation coefficient does not capture.

B is incorrect. A correlation coefficient of -1 signifies a perfect negative linear relationship between two variables. This means that if one variable increases, the other variable decreases in a perfectly proportional manner, and vice versa. This relationship is crucial in finance for diversification purposes, as it allows investors to hedge against risk by combining assets that move in opposite directions.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (d): Calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data.

Q.1306 Peter Pamco, a fund manager, constructs a portfolio consisting of four assets that pay returns of 6%, 13%, 15%, and 7%. If the weights of stocks are 20%, 30%, 40%, and 10%, respectively, then the expected return of the portfolio is *closest to*:

- A. 13.2%.
- B. 11.8%.
- C. 21%.

The correct answer is **B**.

$$\text{Total return of portfolio} = 0.2(6\%) + 0.3(13\%) + 0.4(15\%) + 0.1(7\%) = 11.8\%$$

A is incorrect. The option suggesting 13.2% as the expected return does not align with the calculation based on the given weights and returns of the assets in the portfolio.

C is incorrect. The option suggesting 21% as the expected return significantly overestimates the portfolio's performance. This figure does not correspond with the weighted average of the returns provided for the assets in the portfolio. Such a high expected return could only be achieved if the assets with higher returns (13%, 15%) had significantly greater weights or if the returns themselves were higher. This highlights the importance of accurately applying the formula for expected return, taking into account the actual weights and returns of the assets in the portfolio.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I.
LOS (a): Describe characteristics of the major asset classes that investors consider in forming portfolios.

Q.1309 The line that represents the combination of an optimal risky portfolio and a risk-free asset is known as the:

- A. Indifference curve.
- B. Capital allocation line.
- C. Efficient frontier.

The correct answer is **B**.

The capital allocation line represents the combination of an optimal risky portfolio and a risk-free asset. The slope of the CAL, known as the Sharpe ratio, measures the additional return an investor receives for each additional unit of risk. The CAL starts from the risk-free rate on the y-axis, indicating the return of the risk-free asset, and extends upward to the left, showing the increasing return levels available with increasing levels of risk from the risky portfolio. This line is significant because it helps investors understand how they can adjust their portfolio to achieve a desired level of risk and return by mixing a risk-free asset with a risky portfolio.

A is incorrect. An indifference curve represents combinations of portfolios that give the investor the same level of satisfaction or utility. Indifference curves are used in the context of utility theory to illustrate an investor's preference for risk versus return. Each curve connects points that offer the same utility level to the investor, but they do not specifically represent the combination of a risk-free asset and a risky portfolio. Therefore, the concept of an indifference curve is distinct from the Capital Allocation Line, which directly relates to the mix of a risk-free asset and an optimal risky portfolio to achieve different levels of expected return for varying levels of risk.

C is incorrect. No other portfolios offer higher returns for the same risk or lower risk for the same return. The Efficient Frontier is a key concept in portfolio optimization, but it does not specifically incorporate a risk-free asset. Instead, it focuses on the optimal combination of risky assets alone. While the Efficient Frontier is related to the concept of the Capital Allocation Line, as the tangent point between the CAL and the Efficient Frontier identifies the optimal risky portfolio, the Efficient Frontier itself does not represent the combination of a risk-free asset and a risky portfolio, which is the defining characteristic of the Capital Allocation Line.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (c): Explain the selection of an optimal portfolio, given an investor's utility (or risk aversion) and the capital allocation line.

Q.1311 A portfolio that has the least risk (smallest standard deviation) on the efficient frontier is called the:

- A. Global minimum variance portfolio.
- B. Least risky portfolio.
- C. Most efficient portfolio.

The correct answer is **A**.

A portfolio with the least risk (smallest standard deviation) on the efficient frontier is called the global minimum variance portfolio. The efficient frontier itself is a concept from modern portfolio theory, which represents a set of portfolios that offer the highest expected return for a given level of risk or the lowest risk for a given level of expected return. Among these portfolios, the global minimum variance portfolio is unique because it is the one that minimizes risk across all possible portfolios, not just those on the efficient frontier. This makes it an important concept in portfolio management and asset allocation, as it provides a benchmark for the lowest risk that can be achieved through diversification under the assumptions of modern portfolio theory.

B is incorrect. This option incorrectly suggests that the portfolio with the least risk on the efficient frontier is known as the least risky portfolio. While this description is intuitively appealing, it lacks the specificity and recognition of the established terminology within finance and investment theory. The term "least risky portfolio" could apply to various contexts and does not specifically denote the portfolio on the efficient frontier with the smallest standard deviation.

C is incorrect. Labeling the portfolio with the least risk on the efficient frontier as the most efficient portfolio is misleading. Efficiency, in the context of the efficient frontier, refers to the optimal trade-off between risk and return. While the global minimum variance portfolio does indeed have the least risk, it does not necessarily offer the most efficient trade-off between risk and return for all investors. Different investors may have different risk tolerances and return objectives, leading them to prefer portfolios elsewhere on the efficient frontier that better align with their individual preferences. Therefore, the term "most efficient portfolio" is too broad and does not accurately describe the unique characteristics of the global minimum variance portfolio.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (g): Describe and interpret the minimum-variance and efficient frontiers of risky assets and the global minimum-variance portfolio.

Q.1313 Which stock will a risk-seeking investor *most likely* pick if Stock A pays a 5% return with a 2% standard deviation and Stock B pays a 7% return with a 6% standard deviation?

- A. Stock A
- B. Stock B
- C. Indifference between A and B

The correct answer is **B**.

In the context of choosing between Stock A and Stock B, the decision-making process of a risk-seeking investor would be influenced primarily by the trade-off between the expected returns and the associated risk levels of each stock.

Stock A offers a 5% return with a 2% standard deviation, indicating a relatively low level of risk and a modest potential return. On the other hand, Stock B provides a 7% return with a 6% standard deviation, signifying a higher level of risk but also a greater potential return. For a risk-seeking investor, the higher expected return of Stock B, despite its greater risk (as quantified by the standard deviation), makes it a more attractive investment option. The investor's preference for higher risk in pursuit of higher returns aligns with the characteristics of Stock B, making it the preferred choice.

A is incorrect. Stock A, with its lower return and lower standard deviation, represents a safer investment compared to Stock B. While it might be suitable for risk-averse investors who prioritize stability and are cautious about potential losses, it does not align with the preferences of a risk-seeking investor. The lower potential return of Stock A, despite its reduced risk, is less appealing to an investor who is willing to embrace higher volatility for the chance of achieving greater financial gains.

C is incorrect. Indifference between Stock A and Stock B would imply that the investor places equal value on the different risk-return profiles of the two stocks, which is not consistent with the behavior of a risk-seeking investor. Risk-seeking investors have a clear preference for investments that offer higher returns, even if those investments come with higher levels of risk. Therefore, suggesting that a risk-seeking investor would be indifferent between a lower-risk, lower-return option and a higher-risk, higher-return option does not accurately reflect the decision-making criteria of such investors.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (b): Explain risk aversion and its implications for portfolio selection.

Q.1315 Which of the following statements is *most* accurate regarding a negative covariance between two assets?

The returns of two assets are:

- A. Moving together in negative directions.
- B. Moving in opposite directions.
- C. Uncorrelated.

The correct answer is **B**.

Negative covariance between two assets indicates that the returns of these assets tend to move in opposite directions. By including assets with negative covariance in a portfolio, an investor can potentially lower the portfolio's overall volatility, as the negative movement in one asset's return is often offset by a positive movement in another's. This relationship is crucial for constructing a diversified portfolio that aims to minimize risk while striving for a certain level of return.

A is incorrect. This option suggests that the returns of two assets are moving together in negative directions, which misinterprets the concept of negative covariance. Negative covariance does not imply that both assets are moving negatively (i.e., both losing value) at the same time. Instead, it means that when one asset's return increases, the other's tends to decrease, and vice versa. The direction (positive or negative) of the returns is not specified by the covariance; it only indicates the relationship between the movements of the two assets.

C is incorrect. Stating that two assets are uncorrelated implies that there is no linear relationship between their returns. However, negative covariance specifically indicates a type of linear relationship where the returns of the two assets move in opposite directions. Uncorrelated assets have a covariance of zero, meaning that the return of one asset provides no information about the return of the other. This is distinctly different from a negative covariance, which does provide information about the relationship between the returns of two assets.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (d): Calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data.

Q.1316 Which of the following has a greater return and a higher risk?

- A. T-Bills
- B. Large-cap stocks
- C. Small-cap stocks

The correct answer is **C**.

Small-cap stocks are generally considered to have a greater return and a higher risk compared to T-Bills and large-cap stocks. This is primarily due to the nature of small-cap companies, which are smaller in market capitalization. These companies often operate in niche markets or are in the early stages of development, making them more susceptible to market volatility and economic changes. However, this also means they have a higher potential for growth compared to larger, more established companies. Historically, small-cap stocks have shown higher returns over the long term, albeit with higher volatility and risk. This higher risk and return profile is attributed to the fact that small-cap companies can rapidly grow in value, but they can also face significant challenges that can adversely affect their stock prices.

A is incorrect. T-Bills, or Treasury Bills, are short-term government securities that are considered to be one of the safest investments since they are backed by the full faith and credit of the U.S. government. Due to their low risk, T-Bills typically offer lower returns compared to stocks.

B is incorrect. Large-cap stocks represent companies with large market capitalizations and are generally considered to be more stable and less volatile than small-cap stocks. These companies are often leaders in their industries, with established business models and consistent revenue streams. While large-cap stocks can offer solid returns and are an essential part of a diversified investment portfolio, they typically do not offer the same growth potential as small-cap stocks. The lower risk associated with large-cap stocks usually translates to lower volatility and, consequently, lower returns compared to small-cap stocks. Investors looking for growth might prefer small-cap stocks despite the higher risk, while those seeking stability might lean towards large-cap stocks.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (b): Explain risk aversion and its implications for portfolio selection.

Q.1321 An investor purchased a share for \$65 which paid a dividend of \$3 and was sold for \$72 at the end of the period. The holding period return is *closest to*:

- A. 12%.
- B. 13.33%.
- C. 15.38%.

The correct answer is C.

$$\text{HPR} = \frac{(\text{Ending price} - \text{Beginning price} + \text{Dividend})}{\text{Beginning price}}$$
$$\text{HPR} = \frac{(\$72 - \$65 + \$3)}{\$65} = 15.38\%$$

A is incorrect. It suggests an HPR of 12%. This calculation does not accurately reflect the total returns from the investment, including both the capital gain and the dividend received. It underestimates the actual return the investor made on the investment.

B is incorrect. It indicates an HPR of 13.33%. It appears to only partially account for the dividend received or the capital gain, leading to an inaccurate representation of the investment's performance.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (d): Calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data.

Q.1327 Calculate the standard deviation of two equally weighted risky assets in a portfolio if the variance of the two assets is 0.0121 and 0.0484 and the correlation is 1.

- A. 0.237
- B. 0.165
- C. 0.07

The correct answer is **B**.

When the correlation is 1, the standard deviation is simply the weighted average of the standard deviation of assets in the portfolio.

$$\sigma_p = \sqrt{0.0121} = 0.11$$

$$\sigma_p = \sqrt{0.0484} = 0.22$$

Then, substituting these values into the portfolio standard deviation formula:

$$\sigma_p = \sqrt{(0.5)^2(0.11)^2 + (0.5)^2(0.22)^2 + 2(0.5)(0.5)(0.11)(0.22)(1)}$$

A is incorrect. This option suggests a portfolio standard deviation of 0.237, which does not align with the calculated value.

C is incorrect. The option indicating a standard deviation of 0.07 significantly underestimates the risk of the portfolio.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (e): Calculate and interpret portfolio standard deviation.

Q.1328 Calculate the standard deviation of two equally weighted risky assets in a portfolio if the standard deviations of the two assets are 9% and 14% and the correlation is 0.

- A. 0.083
- B. 0.168
- C. 0.239

The correct answer is A.

$$\sigma_p = \sqrt{(0.5^2 \times 0.09^2) + (0.5^2 \times 0.14^2) + 2 \times 0.5 \times 0.5 \times 0.09 \times 0.14 \times 0}$$

Since the correlation is 0, the last term of the equation drops out, simplifying the calculation to:

$$\sigma_p = \sqrt{(0.5^2 \times 0.09^2) + (0.5^2 \times 0.14^2)}$$

Calculating further:

$$\sigma_p = \sqrt{(0.25 \times 0.0081) + (0.25 \times 0.0196)}$$

$$\sigma_p = \sqrt{0.002025 + 0.0049}$$

$$\sigma_p = \sqrt{0.006925} = 0.083$$

B is incorrect. A standard deviation of 0.168 would imply a higher level of risk and volatility in the portfolio than what is calculated based on the given standard deviations of the individual assets and their correlation. This value does not accurately reflect the combined risk of the two assets when they are equally weighted and uncorrelated.

C is incorrect. A standard deviation of 0.239 would suggest an even higher level of risk and volatility than option B, which is not supported by the calculation based on the provided data. This value significantly overestimates the portfolio's risk, given the assets' standard deviations and zero correlation.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (e): Calculate and interpret portfolio standard deviation.

Q.2841 Which of the following is *least likely* an interpretation of the correlation coefficient?

- A. A correlation coefficient of +1 means that the mean returns of two assets move proportionately in the same direction.
- B. A correlation coefficient of -1 means that the mean returns of two assets move proportionately in a negative direction.
- C. A correlation coefficient of -1 means that the mean returns of two assets move proportionately in opposite directions.

The correct answer is **B**.

The term "in a negative direction" could be interpreted in various ways. It might imply that both assets are declining in value, which is not necessarily the case with a correlation coefficient of -1. A correlation coefficient of -1 indicates a perfect negative correlation, meaning if one asset's return increases, the other's return decreases proportionately, and vice versa.

A is incorrect. This option correctly interprets a correlation coefficient of +1, indicating that the mean returns of two assets move proportionately in the same direction. This means if one asset's return increases, the other asset's return also increases by a proportional amount, and vice versa for decreases. This interpretation aligns with the definition of a perfect positive correlation, where the relationship between two variables is linear and moves in the same direction at all times, reflecting a direct and proportional relationship between the returns of the two assets.

C is incorrect. This option accurately describes a correlation coefficient of -1, stating that the mean returns of two assets move proportionately in opposite directions. This reflects an inverse relationship between the returns of the two assets, where their movements are perfectly mirrored but in opposite directions.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (d): Calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data.

Q.2842 Determine the correlation between the shares of Glam Corp. and Duncan Inc. if the covariance of the assets is 0.04, the standard deviation of Glam Corp. is 32% and the standard deviation of Duncan Inc. is 41%.

- A. 0.305
- B. 0.005
- C. 0.11

The correct answer is **A**.

$$\text{Correlation} = \frac{\text{Covariance}}{(\text{Standard deviation A} \times \text{Standard deviation B})}$$

$$\text{Correlation} = \frac{0.04}{(0.32 \times 0.41)} = 0.305$$

B is incorrect. A correlation of 0.005 would suggest an almost non-existent linear relationship between the returns of the two assets, which is not supported by the given data. The calculation of the correlation coefficient using the provided covariance and standard deviations of Glam Corp. and Duncan Inc. yields a result of 0.305, not 0.005.

C is incorrect. A correlation of 0.11 would indicate a very weak positive linear relationship between the returns of Glam Corp. This highlights the necessity of accurately calculating the correlation to understand the strength and direction of the relationship between the returns of two assets.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (d): Calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data.

Q.2843 A junior fund manager at Dapper Assets Management is constructing a portfolio consisting of two large-cap stocks that trade on the London stock exchange. Using the data given in the following table, calculate the standard deviation of stock A.

Year	Stock A Return	Stock B Return
1	17%	45%
2	21%	20%
3	-8%	-2%
4	-1%	2%
5	4%	-19%
6	19%	2%
7	-7%	13%

- A. 12.46%
- B. 1.33%
- C. 7.56%

The correct answer is **A**.

$$\text{Mean return} = \frac{(0.17 + 0.21 - 0.08 - 0.01 + 0.04 + 0.19 - 0.07)}{7} = 0.064$$

$$\text{Variance} = \frac{((0.17 - 0.064)^2 + (0.21 - 0.064)^2 + (-0.08 - 0.064)^2 + (-0.01 - 0.064)^2 + (0.04 - 0.064)^2)}{6}$$

As the variance of Stock A is 0.015529, the standard deviation = $\sqrt{0.015529} = 0.1246$

B is incorrect. A standard deviation of 1.33% would suggest a very low level of volatility in stock A's returns, which does not match the calculated standard deviation based on the given data. This option likely results from a misunderstanding of the calculation process or an error in computation.

C is incorrect. A standard deviation of 7.56% is also incorrect and does not align with the calculated standard deviation from the provided data.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (e): Calculate and interpret portfolio standard deviation.

Q.2844 A junior fund manager at Dapper Assets Management is constructing a portfolio consisting of two large-cap stocks that trade on the London stock exchange. In a meeting with the investment committee, the manager was asked to present the covariance of both stocks. Using the data given in the following table, calculate the covariance if the population mean is unknown.

Year	Stock A Return	Stock B Return
1	17%	45%
2	21%	20%
3	-8%	-2%
4	-1%	2%
5	4%	-19%
6	19%	2%
7	-7%	13%

- A. 0.0144
- B. 0.0113
- C. 0.0091

The correct answer is **B**.

Below are the calculations:

Stock A Return minus Mean Return of A	Stock B Return minus Mean Return of B	Covariance = (Stock A Return Mean Return of A) × (Stock B Return minus Mean Return of B)
0.1057	0.3629	0.0384
0.1457	0.1129	0.0164
-0.1443	-0.1071	0.0155
-0.0743	-0.0671	0.0050
-0.0243	0.2771	0.0067
0.1257	-0.0671	-0.0084
-0.1343	0.0429	-0.0058

$$\text{Cov} = \frac{(0.0384 + 0.0164 + 0.0155 + 0.0050 + 0.0067 - 0.0084 - 0.0058)}{(n - 1)}$$

$$\text{Cov} = \frac{(0.0384 + 0.0164 + 0.0155 + 0.0050 + 0.0067 - 0.0084 - 0.0058)}{6} = 0.0113$$

The reason we use "n-1" and not "n" is essentially that the population mean $E(X)$ is not known and is replaced by the sample mean \bar{x} .

Note: You can also do the problem with the help of the financial calculator by using the STAT function and using the sample standard deviation.

A is incorrect. The value of 0.0144 might result from a misunderstanding of the formula or

incorrect calculations. It's essential to accurately calculate the mean returns and correctly apply the sample covariance formula, ensuring that the deviations are correctly multiplied and summed before dividing by $n-1$.

C is incorrect. It's crucial to follow the sample covariance formula accurately, including the use of $n-1$ in the denominator to account for the estimation of the population parameter from a sample.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (d): Calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data.

Q.2845 A fund manager is constructing a portfolio consisting of two stocks. Which of the following equations can the manager use to calculate the correlation coefficient if the covariance is 0.0168, the standard deviation of stock A is 0.125 and the standard deviation of stock B is 0.2?

- A. $0.0168/(0.125*0.2)^2$
- B. $0.0168/(0.125*0.2)$
- C. $0.0168/(0.125^2*0.2^2)$

The correct answer is **B**.

$$\text{Correlation} = \frac{\text{Covariance}}{(\text{Standard deviation A} \times \text{Standard deviation B})}$$

$$\text{Correlation} = \frac{0.0168}{(0.125 \times 0.2)}$$

A is incorrect. It suggests squaring the product of the standard deviations in the denominator, which is not how the correlation coefficient is calculated.

C is incorrect. It suggests squaring each of the standard deviations before multiplying them together in the denominator. Squaring each standard deviation before multiplying would result in a much smaller denominator, which could falsely inflate the perceived strength of the correlation between the two stocks.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (d): Calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data.

Q.2846 Hakim Ahmed has recently joined Lampard Investment Inc. He was given the data related to the assets of a portfolio provided in the following table. If the weight of Asset X is 35% and the weight of Asset Z is 65%, then the variance of the portfolio is *closest to*:

Variance Asset X	0.1225
Variance Asset Z	0.3721
Covariance	0.19

- A. 0.3712.
- B. 0.1156.
- C. 0.2587.

The correct answer is **C**.

$$\text{Portfolio Variance} = (\text{Weight of Asset X}^2 \times \text{Std. Dev. Asset X}^2) + (\text{Weight of Asset Z}^2 \times \text{Std. Dev. Asset Z}^2) + 2 \times \text{Weight of Asset X} \times \text{Weight of Asset Z} \times \text{Covariance}$$

$$\text{Portfolio Variance} = (0.1225 \times 0.1225) + (0.4225 \times 0.3721) + (2 \times 0.35 \times 0.65 \times 0.19) = 0.2587$$

Note that Variance Asset X = Std. Dev. Asset X²

A is incorrect. The value of 0.3712 might suggest a misunderstanding of how to properly apply the weights of the assets or an incorrect calculation of the portfolio variance.

B is incorrect. The value of 0.1156 significantly underestimates the portfolio variance. Covariance plays a crucial role in determining the portfolio variance, especially in diversified portfolios where the correlation between assets affects the overall risk. Therefore, omitting or miscalculating the impact of covariance can lead to a significant underestimation of portfolio variance.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (d): Calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data.

Q.2847 Hakim Ahmed has recently joined Lampard Investment Inc. He has been given data related to the assets of a client's portfolio provided in the following table:

Variance Asset X	0.1225
Variance Asset Z	0.3721
Covariance	0.19

If the weight of Asset X is 35% and the weight of Asset Z is 65%, then the correlation coefficient of the portfolio is *closest to*:

- A. 0.8899.
- B. 0.0469.
- C. 4.168.

The correct answer is **A**.

$$\text{Standard deviation of } X = 0.1225^{1/2} = 0.35$$

$$\text{Standard deviation of } Z = 0.3721^{1/2} = 0.61$$

$$\text{Correlation coefficient} = \frac{\text{Covariance}(X, Z)}{(\text{Standard deviation of } X \times \text{Standard deviation of } Z)}$$

$$\text{Correlation coefficient} = \frac{0.19}{(0.35 \times 0.61)} = 0.8899$$

Note: The correlation coefficient does not take into account the weights.

B is incorrect. A correlation coefficient of 0.0469 would indicate a very weak correlation between the two assets, which does not align with the calculated value of 0.8899. The correlation coefficient measures the strength and direction of a linear relationship between two variables, and a value close to 0 suggests no linear correlation. This is not the case here, as the calculation shows a strong positive correlation.

C is incorrect. A correlation coefficient of 4.168 is not possible. The range of a correlation coefficient is between -1 and 1, where 1 indicates a perfect positive linear correlation, -1 indicates a perfect negative linear correlation, and 0 indicates no linear correlation. A value of 4.168 falls outside this range, indicating a misunderstanding of the correlation coefficient's properties.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (d): Calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data.

Q.2848 Which of the following is the most appropriate formula for the variance of a portfolio of two assets if the assets are perfectly correlated?

- A. Portfolio Variance = (Weight of Asset 1² + Weight of Asset 2²) * Std. Dev. Asset 1 or 2
- B. Portfolio Variance = (Weight of Asset 1 * Std. Dev. Asset 1 + Weight of Asset 2 * Std. Dev. Asset 2)²
- C. Portfolio Variance = (Weight of Asset 1² * Std. Dev. Asset 1²) + (Weight of Asset 2² * Std. Dev. Asset 2²)

The correct answer is **B**.

The formula for the variance of a portfolio of two assets with a correlation of +1 (or perfect correlation) is:

$$(\text{Weight of Asset 1} \times \text{Std. Dev. Asset 1} + \text{Weight of Asset 2} \times \text{Std. Dev. Asset 2})^2$$

A is incorrect. It suggests a formula that does not account for the correlation between the assets. The formula $(\text{Weight of Asset 1}^2 + \text{Weight of Asset 2}^2) \times \text{Std. Dev. Asset 1 or 2}$ would only be applicable if the assets were perfectly uncorrelated (correlation coefficient of 0), which is not the case here. This formula underestimates the portfolio variance by ignoring the covariance between the assets, which is a critical component in the calculation of portfolio variance, especially under perfect correlation.

C is incorrect. It represents the formula for calculating the portfolio variance without considering the correlation between the assets. The formula $(\text{Weight of Asset 1}^2 \times \text{Std. Dev. Asset 1}^2) + (\text{Weight of Asset 2}^2 \times \text{Std. Dev. Asset 2}^2)$ is used when the assets are uncorrelated. This formula fails to incorporate the covariance between the assets, which is essential for accurately determining the portfolio's variance when the assets are perfectly correlated. In the context of perfect correlation, omitting the covariance leads to a significant underestimation of the portfolio's risk.

CFA Level I, Portfolio Management, Learning Module 1: Portfolio Risk & Return: Part I. LOS (d): Calculate and interpret the mean, variance, and covariance (or correlation) of asset returns based on historical data.

Q.4836 What does the capital allocation line (CAL) represent when a risk-free asset is combined with a portfolio of risky assets?

- A. The set of portfolios that minimizes the risk for a given level of return.
- B. The set of portfolios that maximizes the return for a given level of risk.
- C. The set of portfolios that offer the same return as the risk-free asset.

The correct answer is **B**.

The capital allocation line (CAL) represents the set of portfolios that maximizes the return for a given level of risk. When a risk-free asset is combined with a portfolio of risky assets, the resulting CAL illustrates the opportunity for investors to choose a superior risk-return trade-off compared to investing in risky assets alone. The slope of the CAL represents the reward-to-variability ratio.

A is incorrect. The efficient frontier, not the CAL, represents the set of portfolios that minimizes risk for a given level of return.

C is incorrect. The CAL actually offers a continuum of return possibilities based on the different combinations of the risk-free asset and the portfolio of risky assets, not just the return of the risk-free asset.

CFA Level I, Topic 3 - Portfolio Management, Learning Module:1, Portfolio Risk and return: Part I, LOS (c) Explain the selection of an optimal portfolio, given an investor's utility (or risk aversion) and the capital allocation line.

Q.4837 What is the implication of combining investments that are not perfectly correlated in a portfolio?

- A. The portfolio's overall risk increases.
- B. The portfolio's overall risk cannot change.
- C. The portfolio's overall risk can decrease due to diversification.

The correct answer is **C**.

The portfolio's overall risk can decrease due to diversification when combining investments that are not perfectly correlated. This characteristic is due to the fact that the investments may respond differently to various economic events, and their potential negative returns can offset each other, thereby reducing overall volatility.

A is incorrect. The combination of non-perfectly correlated investments can lower, not increase, the portfolio's risk.

B is incorrect. The portfolio's risk can change, and it can decrease due to diversification benefits.

CFA Level I, Topic 3 - Portfolio Management, Learning Module:1, Portfolio Risk and return: Part I, LOS (b) Explain risk aversion and its implications for portfolio selection.

Q.4838 What risk-return characteristics of a portfolio of N risky assets are given by the following equations $E(R_p) = \sum_{i=1}^N w_i E(R_i)$ and $\sigma_p^2 = (\sum_{i=1}^N \sum_{j=1}^N w_i w_j \text{Cov}(ij))$?

- A. Expected return and variance of the portfolio.
- B. Standard deviation and covariance of the portfolio.
- C. Beta coefficient and alpha of the portfolio.

The correct answer is **A**.

The equations $E(R_p) = \sum_{i=1}^N w_i E(R_i)$ for expected return and $\sigma_p^2 = (\sum_{i=1}^N \sum_{j=1}^N w_i w_j \text{Cov}(ij))$ for variance represent the risk-return characteristics of a portfolio composed of N risky assets. Here, w_i is the weight of the ith asset in the portfolio, $E(R_i)$ is the expected return of the ith asset, and $\text{Cov}(ij)$ is the covariance between the returns of assets i and j.

B is incorrect. The standard deviation of the portfolio is the square root of the variance, not directly given by the equation. Covariance is part of the variance calculation.

C is incorrect. Beta coefficient and alpha are measures used in the Capital Asset Pricing Model (CAPM) and are not represented by these equations.

CFA Level I, Topic 3 - Portfolio Management, Learning Module:1, Portfolio Risk and return: Part I, LOS (e) Calculate and interpret portfolio standard deviation.

Q.4839 Assuming there are two risky assets with a zero correlation between them, if the first asset has a standard deviation of 20% and the second asset has a standard deviation of 10%, what is the *likely effect* on the portfolio standard deviation of increasing the weight in the first asset?

- A. The portfolio standard deviation will likely decrease.
- B. The portfolio standard deviation will likely increase.
- C. The portfolio standard deviation will likely remain unchanged.

The correct answer is **B**.

The portfolio standard deviation will likely increase when the weight of the first asset with a higher standard deviation (20%) is increased, assuming a zero correlation between the two assets. This is because a greater weight in the asset with higher volatility will generally increase the overall portfolio risk.

A is incorrect. The portfolio's standard deviation typically increases when the weight of the higher risk asset is increased, not decrease.

C is incorrect. Changing the weights of the assets in the portfolio will change the overall portfolio standard deviation.

CFA Level I, Topic 3 - Portfolio Management, Learning Module:1, Portfolio Risk and return: Part I, LOS (e) Calculate and interpret portfolio standard deviation.

Q.4840 When combining a risk-free asset with a portfolio of risky assets, which type of investors are *most likely* to invest a larger proportion of their wealth in the risk-free asset?

- A. Investors seeking to maximize returns regardless of risk.
- B. Highly risk-averse investors.
- C. Investors who are indifferent to the level of risk.

The correct answer is **B**.

Highly risk-averse investors are most likely to invest a larger proportion of their wealth in the risk-free asset. These investors seek to minimize their exposure to risk and are content with the lower returns provided by risk-free assets relative to riskier investments.

A is incorrect. Investors seeking to maximize returns regardless of risk will be more inclined to invest more in risky assets to gain higher returns.

C is incorrect. Investors who are indifferent to the level of risk are likely to invest in a mix of risk-free and risky assets based on other considerations, rather than favor the risk-free asset exclusively.

CFA Level I, Topic 3 - Portfolio Management, Learning Module:1, Portfolio Risk and Return: Part I, LOS (b) Explain risk aversion and its implications for portfolio selection.

Q.4841 Which of the following measures is *most appropriate* for evaluating the performance of a portfolio considering both risk and return?

- A. Standard deviation of the portfolio.
- B. The Sharpe ratio.
- C. The nominal interest rate

The correct answer is **B**.

The Sharpe ratio is most appropriate for evaluating the performance of a portfolio considering both risk and return. It is a risk-adjusted measure of return that assesses how well the excess return of an investment compensates the investor for the risk taken, relative to a risk-free rate.

A is incorrect. The standard deviation of the portfolio only measures the risk associated with the portfolio and does not consider returns.

C is incorrect. The nominal interest rate does not take into account the risk of investments; it is just a baseline rate of interest without adjustments for inflation or other factors.

CFA Level I, Topic 3 - Portfolio Management, Learning Module:1, Portfolio Risk and return: Part I, LOS (e) Calculate and interpret portfolio standard deviation.

Q.4842 If an investor wishes to create a leveraged portfolio by combining a risk-free asset with risky assets, what is the expected outcome concerning risk and return?

- A. Both risk and return would decrease.
- B. Both risk and return would increase.
- C. Risk would decrease, and return would increase.

The correct answer is **B**.

Both risk and return would increase. A leveraged portfolio involves investing borrowed funds in addition to the investor's own funds, effectively increasing the amount invested in risky assets. This strategy can amplify both the potential returns and the risks associated with the portfolio.

A is incorrect. Leveraging increases both risk and return, not decrease them.

C is incorrect. Leveraging increases risk; it does not decrease it. The potential return increases as well due to higher exposure to risky assets.

CFA Level I, Topic 3 - Portfolio Management, Learning Module:1, Portfolio Risk and return: Part I, LOS (b) Explain risk aversion and its implications for portfolio selection.

Q.4843 What does the capital market line (CML) represent in the context of capital market theory?

- A. The relationship between the expected return of all possible portfolios and their standard deviations.
- B. The relationship between the risk-free rate and the expected market return.
- C. The trade-off between risk and return for portfolios that include all available risky assets.

The correct answer is **C**.

The capital market line (CML) represents the trade-off between risk and return for portfolios that include all available risky assets. It signifies the expected return of efficient portfolios, those that offer the highest expected return for a given level of risk.

A is incorrect. The CML does not represent the expected return of all possible portfolios, only those that are efficient.

B is incorrect. The CML depicts the relationship between portfolio expected return and portfolio total risk (standard deviation) rather than just the risk-free rate and expected market return.

CFA Level I, Topic 3 - Portfolio Management, Learning Module:1, Portfolio Risk and return: Part I, LOS (c) Explain the selection of an optimal portfolio, given an investor's utility (or risk aversion) and the capital allocation line.

Q.4844 An investor is considering a portfolio consisting solely of two risky assets, A and B. Asset A has an expected return of 8%, a standard deviation of return of 15%, and makes up 40% of the portfolio. Asset B has an expected return of 12%, a standard deviation of return of 20%, and constitutes the remaining 60% of the portfolio. If the correlation coefficient between the returns of Asset A and Asset B is 0.3, what is the expected return of the portfolio $E(R_p)$?

- A. 9.6%
- B. 10.4%
- C. 11.2%

The correct answer is **B**.

To calculate the expected return of the portfolio $E(R_p)$, we use the following formula:

$$E(R_p) = w_A \times E(R_A) + w_B \times E(R_B)$$

where,

w_A and w_B are the weights of Asset A and Asset B in the portfolio, respectively. Plug the numbers into the formula:

$$E(R_p) = 0.4 \times 0.08 + 0.6 \times 0.12$$

Now, calculate the expected return:

$$E(R_p) = 0.032 + 0.072 = 0.104, \text{ or } 10.4\%$$

A is incorrect. 9.6% does not represent the correct weighting of the expected returns of the assets.

C is incorrect. 11.2% is higher than the calculated expected portfolio return.

CFA Level I, Topic 3 - Portfolio Management, Learning Module:1, Portfolio Risk and return: Part I, LOS (a) Describe characteristics of the major asset classes that investors consider in forming portfolios.

Learning Module 2: Portfolio Risk & Return: Part II

Q.131 The variance of the market is 5% and the market risk premium is 10%. The risk-free rate is 3%. If the covariance between Allison Company and the market is 6%, Allison's required return is *closest to*:

- A. 3.7%.
- B. 14%.
- C. 15%.

The correct answer is C.

$$B_i = \frac{\text{Cov}(r_i, R_m)}{(s_m^2)} = \frac{0.06}{0.05} = 1.2$$

$$E(r_i) = R_f + (R_m - R_f)B_i$$

$$r_i = 3\% + (10\%) \times 1.2 = 15\%$$

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (b): Explain the capital allocation line (CAL) and the capital market line (CML).

Q.134 Company ABC is expected to return 15% per year to its investors, the market expected return is 8% and the risk-free rate is 3.5%. What is ABC's stock beta?

- A. 1.4375
- B. 1.8750
- C. 2.5556

The correct answer is C.

$$E(R_i) = R_f + \beta_i E(R_m - R_f)$$

$$15\% = 3.5\% + (4.5\%) \beta_i$$

$$11.5\% = (4.5\%) \beta_i$$

$$\beta_i = 2.5556$$

A is incorrect. This calculation does not align with the given values and the correct application of the CAPM equation.

B is incorrect. This value does not result from the correct application of the CAPM equation with the given expected return of ABC, the expected market return, and the risk-free rate. The calculation leading to a beta of 1.875 does not accurately reflect the relationship between the expected return of ABC's stock, the market's expected return, and the risk-free rate as dictated by the CAPM.

CFA Level 1, Portfolio Management, Learning Module 1: Portfolio Risk and Return: Part I, LOS (a) Describe characteristics of the major asset classes that investors consider in forming portfolios.

Q.135 JJK's stock price is \$30 and, in one year, its price is expected to be \$40. The risk-free rate is 5% and the historical S&P return is 15%. If analysts say that the stock is fairly valued, then JJK's beta is *closest to*:

- A. 1.8887.
- B. 2.
- C. 2.833.

The correct answer is **C**.

$$\text{Holding period return} = \frac{(D_1 + S_1 - S_0)}{S_0}$$

$$\text{Holding period return} = \frac{(0 + 40 - 30)}{30} = 0.3333$$

$$E(R_i) = R_f + E(R_m - R_f)\beta_i$$

$$33.33\% = 5\% + (15\% - 5\%) \beta_i$$

$$28.33\% = (10\%) \beta_i$$

$$\beta_i = 2.833$$

A is incorrect. A beta of 1.8887 does not accurately reflect the relationship between JJK's expected return and the market's expected return given the risk-free rate and the expected market return.

B is incorrect. A beta of 2.0 suggests a different level of volatility and risk in relation to the market than what is calculated using the CAPM formula and the given data.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (e): Calculate and interpret beta.

Q.136 Given the Markowitz Portfolio Theory, which of the following statements is *least likely* accurate?

- A. Investors seek to maximize their utility.
- B. Investors measure risk in terms of an investment's variance or standard deviation.
- C. Given the same level of expected return, an investor will choose the investment with the highest amount of risk.

The correct answer is **C**.

This statement is contrary to the fundamental principles of the Markowitz Portfolio Theory, which posits that investors are risk-averse by nature. The theory suggests that for a given level of expected return, investors will prefer the portfolio with the least amount of risk. This preference is rooted in the concept of maximizing utility, where utility is a measure of the satisfaction or benefit that an investor derives from their investment choices. The theory uses the variance or standard deviation of portfolio returns as a measure of risk, indicating that lower variance or standard deviation is preferred for the same level of expected return, as it implies less uncertainty and potential for loss.

A is incorrect. Utility maximization involves selecting a portfolio that offers the highest expected return for a given level of risk or the lowest risk for a given level of expected return. This principle is central to the theory and guides investors in making rational, utility-maximizing choices among different investment portfolios.

B is incorrect. The theory introduces the concept of measuring risk in terms of an investment's variance or standard deviation. This approach to risk measurement is a key aspect of the theory, as it allows for the quantification of risk and the comparison of different investments or portfolios on a standardized basis. By considering both the expected return and the risk (as measured by variance or standard deviation) of an investment, investors can make more informed decisions that align with their risk tolerance and investment objectives.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.409 Taking into account a 2% risk-free rate and using the Sharpe ratio, which of the following portfolios has the best risk-adjusted performance?

Portfolio A: A mean return of 5% with a standard deviation of 3%.
Portfolio B: A mean return of 10% with a standard deviation of 18%.
Portfolio C: A mean return of 17% with a standard deviation of 16%.

- A. Portfolio A
- B. Portfolio B
- C. Portfolio C

The correct answer is **A**.

$$\text{Sharpe ratio} = \frac{R_p - R_f}{\sigma_p}$$

For Portfolio A, the mean return is 5% with a standard deviation of 3%. Using the Sharpe ratio formula, we calculate the Sharpe ratio as follows:

$$S_A = \frac{(5 - 2)}{3} = 1$$

For Portfolio B, the mean return is 10% with a standard deviation of 18%. The Sharpe ratio for Portfolio B is calculated as:

$$S_B = \frac{(10 - 2)}{18} = 0.4444$$

For Portfolio C, the mean return is 17% with a standard deviation of 16%. The Sharpe ratio for Portfolio C is calculated as:

$$S_C = \frac{(17 - 2)}{16} = 0.9375$$

B is incorrect. Portfolio B has a Sharpe ratio of 0.4444, which is lower than Portfolio A's Sharpe ratio. This indicates that, despite its higher mean return, Portfolio B's risk-adjusted performance is not as favorable as Portfolio A's when considering the volatility of returns.

C is incorrect. Portfolio C has a Sharpe ratio of 0.9375, which, while close, is still lower than Portfolio A's Sharpe ratio. This suggests that even though Portfolio C has a significantly higher mean return than Portfolio A, its risk-adjusted performance is slightly less favorable due to its higher standard deviation.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (i): Calculate and interpret the Sharpe ratio, Treynor ratio, M2, and Jensen's alpha.

Q.782 Which of the following is *not* a characteristic of an active portfolio?

- A. The portfolio contains positive weighting for assets that are undervalued, or have a chance of offering above-normal returns.
- B. The portfolio generally has high costs as a significant effort is made in valuing securities.
- C. The portfolio mostly replicates and tracks market indices, constructed on the basis of market prices and market capitalizations.

The correct answer is **C**.

Active investors do not rely on market valuations and invest more in undervalued securities or securities offering above-normal returns on the basis of their own estimate of cash flows, growth rates and discount rates.

A is incorrect. This option describes a fundamental characteristic of an active portfolio. Active portfolio management involves identifying and investing in assets that are perceived to be undervalued or have the potential to offer above-normal returns. This process requires extensive research and analysis to uncover investment opportunities that are not accurately reflected in their current market prices. By focusing on these opportunities, active managers aim to generate higher returns compared to passive strategies that simply track market indices.

B is incorrect. High costs are indeed a characteristic of active portfolio management. This is due to the extensive research, analysis, and frequent trading activities required to identify and capitalize on investment opportunities. Active managers incur costs related to obtaining market data, conducting financial analysis, and executing trades. These costs, which include management fees and transaction costs, are typically higher than those associated with passive portfolio management. The rationale behind these higher costs is the expectation of achieving superior returns through active management strategies.

Passive portfolio management involves constructing a portfolio that mirrors the composition of a specific market index or benchmark. The goal of passive management is not to outperform the market but to replicate its performance, thereby minimizing costs and avoiding the risks associated with active management strategies.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.783 Which of the following situations is referred to as the leveraged position in the risky portfolio?

- A. When there is a positive amount invested in the risk-free asset and in the risky asset.
- B. When there is no amount invested in the risk-free asset.
- C. When there is a negative investment in the risk-free asset.

The correct answer is C.

When an investor borrows money at the risk-free rate of interest and then invests his available wealth with the borrowed funds in the risky portfolio, this borrowing portfolio is referred to as the leveraged position in the risky portfolio.

A is incorrect. Having a positive amount invested in both the risk-free asset and the risky asset does not constitute a leveraged position. This scenario describes a diversified portfolio where the investor allocates funds between a risk-free asset and a risky asset without borrowing. This strategy is typically aimed at balancing risk and return, rather than amplifying them through leverage.

B is incorrect. Simply having no amount invested in the risk-free asset does not automatically imply a leveraged position. An investor could be fully invested in risky assets without borrowing to increase their investment size. This scenario indicates a preference for risk but does not involve leveraging. Leveraging specifically involves borrowing funds to increase the potential investment and return, which is not necessarily implied by having all investments in risky assets.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.784 Two portfolios have the following characteristics:

Portfolio	Return	Beta
A	8%	0.7
B	7%	1.1

Given a market return of 10% and a risk-free rate of 4%, calculate Jensen's Alpha for both portfolios and comment which portfolio has performed better.

- A. -0.2% and -3.6% respectively

Portfolio A has performed better than Portfolio B.

- B. -0.2% and -3.6% respectively

Portfolio B has performed better than Portfolio A.

- C. 0.2% and 3.6% respectively

Portfolio B has performed better than Portfolio A.

The correct answer is **A**.

Jensen's Alpha is calculated as follows:

$$\text{Jensen's Alpha} = R_p - [R_f + B_p(R_m - R_f)]$$

$$\text{Jensen's Alpha}_{\text{Portfolio A}} = 0.08 - [0.04 + 0.7(0.1 - 0.04)] = -0.002$$

$$\text{Jensen's Alpha}_{\text{Portfolio B}} = 0.07 - [0.04 + 1.1(0.1 - 0.04)] = -0.036$$

Jensen's Alpha is -0.2% and -3.6% for A and B respectively. A higher Alpha indicates that a portfolio has performed better.

B is incorrect. It incorrectly states that Portfolio B has performed better than Portfolio A. This is not supported by the calculated Jensen's Alphas, which show that Portfolio A has a less negative Alpha, indicating better performance relative to its expected return based on its beta.

C is incorrect. The values of Jensen's Alpha provided do not match the calculations based on the given data. Additionally, the conclusion that Portfolio B has performed better than Portfolio A contradicts the calculated Jensen's Alphas, which indicate that Portfolio A has outperformed Portfolio B.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (i): Calculate and interpret the Sharpe ratio, Treynor ratio, M2, and Jensen's alpha.

Q.785 The capital asset pricing model (CAPM) is used for the pricing of securities considering:

- A. Non-systematic risk.
- B. Systematic risk.
- C. Total risk.

The correct answer is **B**.

CAPM emphasizes that the expected returns of assets vary only by their systematic risk as measured by beta. Two assets with the same beta will have the same expected return irrespective of the nature of those assets. Given this relationship, all assets are defined only by their beta risk i.e., systematic risk.

A is incorrect. Non-systematic risk, also known as idiosyncratic risk or specific risk, pertains to factors that affect a specific company or industry. Examples include management decisions, product recalls, or regulatory changes affecting a particular sector. CAPM assumes that investors hold diversified portfolios, which effectively eliminates non-systematic risk.

C is incorrect. It underscores the principle that investors are compensated for the risk that cannot be diversified away (systematic risk), rather than the total risk of an investment. Therefore, stating that CAPM is used for pricing securities considering total risk misrepresents the model's focus and application.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.786 Which of the following portfolio has a systematic risk equivalent to its total risk?

- A. A diversified portfolio
- B. An unachievable portfolio
- C. A borrowing portfolio

The correct answer is **A**.

In a diversified portfolio, the unsystematic risk (specific to individual assets) is minimized through the inclusion of various assets with different risk factors. As a result, the systematic risk (market risk) becomes the dominant component of total risk. Therefore, in a well-diversified portfolio, the systematic risk is equivalent to the total risk.

B is incorrect. An unachievable portfolio, is incorrect because the term "unachievable portfolio" doesn't provide information about the systematic or unsystematic risk. It's not a standard term in the context of portfolio risk.

C is incorrect. A borrowing portfolio, is incorrect because the term "borrowing portfolio" doesn't inherently imply anything about the systematic risk. The composition and risk characteristics of a portfolio depend on the assets held and their weights, not just on whether the portfolio involves borrowing.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (c): Explain systematic and nonsystematic risk, including why an investor should not expect to receive additional return for bearing nonsystematic risk.

Q.787 Which of the following is an example of systematic risk?

- A. Regulatory changes
- B. Credit crunches
- C. Product recalls

The correct answer is **A**.

Systematic risk refers to the risk that is inherent to the entire market or an entire market segment. It is also known as market risk. Regulatory changes can have a broad impact on the market as a whole, affecting various industries and companies. Therefore, regulatory changes are an example of systematic risk.

B and C are incorrect. Credit crunches and product recalls may impact specific companies or industries but are not necessarily inherent to the entire market, making them more associated with unsystematic or specific risks.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (c): Explain systematic and nonsystematic risk, including why an investor should not expect to receive additional return for bearing nonsystematic risk.

Q.788 Which of the following portfolio performance evaluation measures provides the extent of the performance of a particular portfolio?

- A. Sharpe ratio
- B. Treynor ratio
- C. Jensen's alpha

The correct answer is **C**.

Both Sharpe and Treynor ratios allow the ranking of portfolios. However, neither ratio gives any information about the extent of the performance, whereas Jensen's alpha and M-Squared both provide such results.

A is incorrect. The Sharpe ratio measures the performance of an investment compared to a risk-free asset, after adjusting for its risk. It is calculated by subtracting the risk-free rate from the return of the portfolio and dividing the result by the standard deviation of the portfolio returns. While the Sharpe ratio is useful for understanding how much excess return is being received for the extra volatility that an investor takes on, it does not provide specific insights into the extent of the portfolio's performance beyond this risk-adjusted measure.

B is incorrect. The Treynor ratio, similar to the Sharpe ratio, is a risk-adjusted measure of return. However, it uses beta (a measure of volatility or systematic risk compared to the market as a whole) instead of the standard deviation of portfolio returns. The Treynor ratio is calculated by subtracting the risk-free rate from the return of the portfolio and dividing the result by the portfolio's beta. This ratio helps in understanding how well the portfolio is compensated for the risk taken, considering the market volatility. However, like the Sharpe ratio, the Treynor ratio does not provide a direct measure of the extent of the portfolio's performance in terms of actual versus expected returns based on market movements.

**CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (i): Calculate and interpret the Sharpe ratio, Treynor ratio, M2, and Jensen's alpha.**

Q.789 Which of the following portfolio performance evaluation measures is based on systematic risk?

- A. Sharpe ratio
- B. Treynor ratio
- C. M-Squared (M2)

The correct answer is **B**.

The Sharpe ratio uses the total risk of the portfolio and the M-Squared is an extension of the Sharpe ratio in that it is based on total risk. On the other hand, the Treynor ratio uses beta (systematic risk).

A is incorrect. The Sharpe ratio is a measure of the performance of an investment compared to a risk-free asset, after adjusting for its risk. It is calculated by subtracting the risk-free rate from the return of the investment and dividing the result by the standard deviation of the investment returns, which represents total risk, including both systematic and unsystematic risk. This makes the Sharpe ratio a broader measure of risk-adjusted performance, not specifically focused on systematic risk.

C is incorrect. M-Squared (M2) is an extension of the Sharpe ratio that also considers total risk. It measures the absolute difference in performance between the portfolio and a benchmark portfolio, adjusted for the risk of the portfolio. The M2 ratio does this by scaling the portfolio to have the same level of risk as the benchmark and then comparing their performances. Like the Sharpe ratio, M2 uses total risk in its calculation, making it unsuitable for evaluating performance based solely on systematic risk.

**CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (i): Calculate and interpret the Sharpe ratio, Treynor ratio, M2, and Jensen's alpha.**

Q.790 With respect to security selection using SML, a rational investor is more likely to invest in points:

- A. Directly lying on the SML.
- B. Above the SML.
- C. Below the SML.

The correct answer is **B**.

The asset will have a low level of risk relative to the amount of expected return and would be a good choice for investors.

A is incorrect. Securities lying directly on the SML are correctly priced according to their risk level and the market's expected return. While these are not poor choices for investment, they do not offer the additional value that securities above the SML do. Securities on the SML provide returns that are commensurate with their risk, but rational investors seek opportunities to maximize returns for any given level of risk, which is more likely found in securities above the SML.

C is incorrect. Securities below the SML are considered overvalued, as they offer lower expected returns for their level of risk compared to the market average. Investing in these securities would not be in line with the objective of maximizing returns for a given level of risk. Rational investors aim to optimize their investment portfolios by selecting securities that either lie on or above the SML, with a preference for the latter, as these offer better returns for the risk undertaken. Therefore, investing in securities below the SML would contradict the principles of efficient and rational investment decision-making.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.791 Which of the following is *most likely* the intercept of the security characteristics line (SCL)?

- A. Jensen's alpha
- B. Beta
- C. M-Squared (M2)

The correct answer is **A**.

The security characteristic line (SCL) is a regression line, plotting performance of a particular security or portfolio against that of the market portfolio at every point in time. The slope of the SCL is the beta, and the intercept is its Jensen's alpha.

B is incorrect. Beta is the measure of a security's or portfolio's volatility in relation to the overall market. It represents the slope of the SCL, not the intercept. A beta greater than 1 indicates that the security is more volatile than the market, while a beta less than 1 suggests it is less volatile. Beta is used to estimate the relative risk of a security or portfolio but does not provide information about its absolute performance, which is the role of Jensen's alpha in the context of the SCL.

C is incorrect. M-Squared (M2) is a performance measurement that adjusts the returns of a portfolio for risk to compare it against a benchmark. M2 is not related to the SCL directly; instead, it is a separate measure used to evaluate the risk-adjusted performance of a portfolio relative to a benchmark. M2 takes into account the volatility of the portfolio and the risk-free rate to provide a single number that indicates how much better or worse a portfolio has performed relative to its benchmark, after adjusting for risk. While M2 is useful for performance evaluation, it does not serve as the intercept of the SCL, which is specifically represented by Jensen's alpha.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS i: calculate and interpret the Sharpe ratio, Treynor ratio, M2, and Jensen's alpha.

Q.792 Which of the following securities has the highest expected return calculated using a capital asset pricing model if the market risk premium is 8%?

Security	Beta
A	0.75
B	0.12
C	1.30
D	1.70

- A. Security B
- B. Security D
- C. It depends on the risk-free rate

The correct answer is **B**.

Regardless of the risk-free rate, Security D has the highest expected return using the following formula:

$$R_i = R_f + B_i[R_m - R_f]$$

As the beta of Security D is the highest, it will have the highest return, regardless of the risk-free rate.

A is incorrect. Security B has the lowest beta of 0.12, which would suggest it has the lowest sensitivity to market movements and, consequently, the lowest expected return according to CAPM.

C is incorrect. The statement "It depends on the risk-free rate" is misleading in this context. While the risk-free rate is a component of the CAPM formula, the question asks for the security with the highest expected return given a constant market risk premium. The risk-free rate affects all securities equally in this scenario, so the determining factor for the highest expected return is the beta of the securities.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.1329 What is the standard deviation of an equally weighted portfolio consisting of one risky asset and one risk-free asset if the standard deviation of the risky asset is 36%?

- A. 0.18
- B. 0.36
- C. 0.0648

The correct answer is **A**.

Since the standard deviation of the risk-free rate is zero, the standard deviation of the portfolio is the weight of the risky asset multiplied by the standard deviation of the risky asset:

$$\sigma_P = 0.5 \times 36\% + 0.5 \times 0 = 18\%$$

B is incorrect. It suggests that the standard deviation of the portfolio is the same as the standard deviation of the risky asset. This ignores the impact of diversification and the presence of a risk-free asset in the portfolio, which reduces the overall portfolio risk.

C is incorrect. It seems to be a misunderstanding of how the standard deviation of a portfolio is calculated, especially in the context of combining a risky asset with a risk-free asset.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.1330 Which of the following terms appropriately defines the difference between the expected return of the market and the risk-free rate of return?

- A. Capital allocation line
- B. Market risk premium
- C. Capital market line

The correct answer is **B**.

The difference between the expected return of the market and the risk-free rate of return is called the market risk premium. The market risk premium reflects the additional return investors expect to receive for taking on the higher risk associated with investing in the stock market compared to risk-free securities, such as government bonds. The risk-free rate represents the return on an investment with zero risk, indicating the time value of money.

A is incorrect. The Capital Allocation Line (CAL) represents a line that shows all possible combinations of risk-free assets and risky assets for an investor. It is used to illustrate the risk-return trade-off in the investment portfolio. The CAL is specific to each investor, depending on their risk tolerance and investment choices. It does not specifically define the difference between the expected return of the market and the risk-free rate of return, which is the definition of the market risk premium.

C is incorrect. The Capital Market Line (CML) represents the efficient frontier of optimal portfolios that offer the highest expected return for a given level of risk or the lowest risk for a given level of expected return, including a risk-free asset. The CML is a special case of the CAL when the portfolio on the efficient frontier includes all risky assets in the market. While the slope of the CML can be interpreted as the market price of risk, which is related to the market risk premium, the CML itself does not define the difference between the expected return of the market and the risk-free rate of return. The market risk premium is a component used in the calculation of the CML's slope but is not synonymous with the CML.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.1331 The optimal capital allocation line for all investors is called the:

- A. Efficient frontier.
- B. Capital allocation line.
- C. Capital market line.

The correct answer is **C**.

When all investors in the market have homogenous expectations of risk and return, the optimal capital allocation line (CAL) for all investors is called the capital market line (CML).

A is incorrect. The Efficient Frontier represents a set of portfolios that offer the highest expected return for a given level of risk or the lowest risk for a given level of expected return, without considering the inclusion of a risk-free asset. It is a curved line in the risk-return space formed by the combination of risky assets only. While the Efficient Frontier is crucial for understanding the risk-return trade-off among portfolios of risky assets, it does not account for the risk-free rate or the combination of risky and risk-free assets, which is a key aspect of the Capital Market Line.

B is incorrect. The Capital Allocation Line (CAL) represents the risk-return trade-off for a specific combination of a risk-free asset and a portfolio of risky assets. Each investor can have their own CAL based on their risk preference and the specific risky portfolio they choose. However, the CAL becomes the Capital Market Line (CML) when the risky portfolio is the market portfolio, which is the optimal portfolio of all risky assets that every investor would choose if they had homogenous expectations. Unlike the CML, which is universally optimal for all investors under the assumption of homogenous expectations, individual CALs can vary significantly among investors.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.1333 Calculate the asset beta when the standard deviation of market returns is 21% and the covariance of assets return with the market return is 0.039.

- A. 0.19
- B. 0.88
- C. 1.3

The correct answer is **B**.

$$\begin{aligned}\text{Beta of asset} &= \frac{\text{Covariance of assets return}}{\text{Variance of market returns}} \\ &= \frac{0.039}{0.21^2} = 0.88\end{aligned}$$

Q.1334 Which of the following is a risk that can be diversified away?

- A. Diversification risk
- B. Unsystematic risk
- C. Systematic risk

The correct answer is **B**.

Unsystematic risk can be mitigated by diversification. The rationale behind this is that unsystematic risks are unique to a particular company or sector and do not affect the market as a whole. Therefore, by investing in a variety of assets across different sectors, an investor can reduce the impact of any one asset's poor performance on the overall portfolio.

A is incorrect. Diversification risk is not a recognized term in finance. The concept seems to be a misunderstanding of what diversification aims to achieve. Diversification is a strategy used to reduce risk by allocating investments among various financial instruments, industries, and other categories. It aims to maximize return by investing in different areas that would each react differently to the same event. Therefore, the term "diversification risk" contradicts the established principles of risk management and diversification.

C is incorrect. It affects all investments to some degree. The only way to protect against systematic risk is through hedging strategies or by investing in assets that are negatively correlated with the market.

**CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (c): Explain systematic and nonsystematic risk, including why an investor should not expect to receive additional return for bearing nonsystematic risk.**

Q.1335 Which of the following is *least likely* an assumption of the capital pricing model?

- A. Investors require higher returns with higher risks.
- B. Investors are subject to taxes and transaction costs.
- C. All investors have the same one-period time horizon.

The correct answer is **B**.

CAPM assumes there are no taxes and no transaction costs.

Assumptions of the model include:

- There are no transaction costs
- There are no taxes
- Assets are infinitely divisible
- Unlimited short-selling is permissible
- All assets are marketable/liquid
- Investors are price takers whose individual buy and sell transactions have no effect on the price
- Investors' utility functions are based solely on expected portfolio return and risk
- The only concern among investors is the risk and return over a single period and this single period is the same for all investors

A is incorrect. The assumption that investors require higher returns for taking on higher risks is a core principle of the CAPM. The model explicitly incorporates this idea through the concept of the security market line (SML), which plots the expected return of a security or portfolio against its beta with the market. The beta measures the sensitivity of the security's returns to market returns, serving as a proxy for its systematic risk. According to CAPM, the expected return on a security is equal to the risk-free rate plus the security's beta times the market risk premium (the difference between the market's expected return and the risk-free rate). This relationship directly links higher risk (as measured by beta) with the expectation of higher returns, aligning perfectly with the assumption in question.

C is incorrect. The assumption that all investors have the same one-period time horizon is another foundational aspect of CAPM. This assumption simplifies the model by ensuring that all

investors are making decisions based on the same timeframe, which facilitates the derivation of a unified expected return for each asset that applies to all investors. By assuming a single-period investment horizon, CAPM can focus on the relationship between risk and return without the added complexity of varying investment durations and the timing of cash flows. This assumption is critical for the model's theoretical underpinnings, even though it may not fully capture the diverse investment horizons present in the real world.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.1337 Which of the following uses systematic risk on the X-axis?

- A. Security market line
- B. Capital market line
- C. Capital allocation line

The correct answer is **A**.

The SML uses the Beta (or systematic risk) on the X-axis while the CML and the CAL use standard deviation on the X-axis.

B is incorrect. The Capital Market Line (CML) represents portfolios that optimally combine risk and return. It is plotted using the standard deviation of portfolio returns, which measures total risk (both systematic and unsystematic), on the X-axis, not systematic risk. The CML emanates from the risk-free rate and touches the efficient frontier at the market portfolio, indicating the highest Sharpe ratio or the best risk-return combination available to investors. The use of total risk rather than systematic risk differentiates the CML from the SML.

C is incorrect. The Capital Allocation Line (CAL) represents the risk-return trade-off of a particular portfolio and includes all possible combinations of risk-free assets and a risky portfolio. Like the CML, the CAL uses the standard deviation of portfolio returns on the X-axis as a measure of total risk. The slope of the CAL indicates the risk premium per unit of total risk, which varies depending on the specific risky portfolio chosen. The CAL is personalized for individual investors based on their risk preferences and the specific risky assets they include in their portfolio, contrasting with the SML's focus on systematic risk and the market as a whole.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (h): Describe and demonstrate applications of the CAPM and the SML.

Q.1339 The standard deviation of an asset's return is 10%, and the standard deviation of markets return is 14%. If the correlation of returns with the market index is 0.7, then the beta of the asset is *closest to*:

- A. 0.5.
- B. 0.1.
- C. 1.8.

The correct answer is **A**.

$$\text{Assets beta} = \text{Correlation of markets return} \times \left(\frac{\text{Standard deviation of the asset}}{\text{Standard deviation of market returns}} \right)$$

$$\text{Assets beta} = 0.7 \times \frac{10\%}{14\%} = 0.5$$

B is incorrect. A beta of 0.1 would imply an extremely low level of volatility in relation to the market, which does not align with the given correlation and standard deviations. Such a low beta would suggest that the asset's returns are almost entirely unaffected by market movements, which is not supported by the given data.

C is incorrect. A beta of 1.8 would indicate a high level of volatility relative to the market, suggesting that the asset's returns are much more sensitive to market movements than the given data supports. A beta significantly greater than 1 would imply that the asset is expected to outperform the market in rising markets and underperform in falling markets to a much greater extent than the calculated beta of 0.5 indicates.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (e): Calculate and interpret beta.

Q.1340 The expected return of a portfolio is 17% and the return on risk-free assets is 8%. The beta of the portfolio is 1.2, and the standard deviation of the portfolio is 5.5%. Assuming that an investor invests 115% of his savings in this portfolio, his expected return is *closest to*:

- A. 18.35%.
- B. 19.55%.
- C. 12.5%.

The correct answer is **A**.

The formula for the expected return in this scenario is given by:

$$E_r = w_f R_f + w_m E[r_m]$$

Since the weight of the market portfolio is more than 100%, the investor is borrowing 15% of funds at the risk-free rate and investing 115% in the market portfolio.

$$E_r = (-15\%)(8\%) + (115\%)(17\%) = 18.35\%$$

B is incorrect. The option suggesting 19.55% as the expected return misunderstands the impact of leveraging the investment. While the investor is indeed investing more than 100% of his savings in the portfolio, the calculation must account for the cost of borrowing at the risk-free rate.

C is incorrect. The option suggesting 12.5% as the expected return significantly underestimates the impact of leveraging the investment.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (g): Calculate and interpret the expected return of an asset using the CAPM.

Q.1341 Which of the following return generating models uses macroeconomic indicators such as GDP growth, inflation along with fundamental factors like earnings, and earnings growth?

- A. Market model
- B. Multifactor model
- C. Revenue model

The correct answer is **B**.

The multifactor model uses macroeconomic indicators such as GDP growth, inflation along with fundamental factors like earnings, earnings growth, etc.

A is incorrect. The market model primarily focuses on the relationship between the returns of an individual asset and the returns of the market as a whole. It typically uses the market index as the sole explanatory variable, ignoring the multifaceted influences of macroeconomic indicators and fundamental factors. While the market model can be useful for understanding how assets move in relation to the market, it does not account for the broader range of variables that the multifactor model incorporates, making it less comprehensive in predicting asset returns based on economic and company-specific factors.

C is incorrect. The revenue model, while important in financial analysis, primarily focuses on predicting a company's future revenues based on various factors such as market demand, pricing strategies, and competitive environment. It does not directly incorporate macroeconomic indicators or a broad set of fundamental factors to predict asset returns. Unlike the multifactor model, the revenue model is more narrowly focused on forecasting a specific aspect of a company's financial performance rather than offering a comprehensive framework for understanding and predicting overall asset returns in the context of both the economic environment and company-specific factors.

***CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (d): Explain return generating models (including the market model) and their uses.***

Q.1342 Kate Williams is a portfolio risk analyst for Hampton Funds. She is assigned to calculate the beta of Lion Inc. shares. What is its beta if the standard deviation of market returns is 19% and the covariance of Lions returns with the market return is 0.163?

- A. 0.85
- B. 4.51
- C. 0.0451

The correct answer is **B**.

$$\text{Beta} = \frac{\text{Covariance of Asset's return with market return}}{\text{Variance of market returns}}$$

$$\text{Beta} = \frac{0.163}{0.0361} = 4.51$$

A is incorrect. A beta of 0.85 would suggest a lower volatility relative to the market, which does not align with the given covariance and variance values. A beta less than 1 indicates that the asset is less volatile than the market, but the calculation based on the provided data results in a beta significantly higher than 1, indicating a higher volatility compared to the market.

C is incorrect. A beta of 0.0451 significantly underestimates the stock's volatility in relation to the market.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (e): Calculate and interpret beta.

Q.1343 What is the expected return of a stock if the expected market return is 11%, the risk-free rate is 9%, and the stock's beta is 0.91?

- A. 11%
- B. 19.91%
- C. 10.82%

The correct answer is C.

According to CAPM:

$$\text{Expected return of stock} = \text{Risk-free rate} + \text{beta} (\text{Market risk} - \text{Risk-free rate})$$

$$E_r = 9\% + 0.91(11\% - 9\%) = 10.82\%$$

A is incorrect. This option suggests that the expected return of the stock is the same as the expected market return, which is 11%. This ignores the influence of the stock's beta and the risk-free rate on its expected return. The CAPM formula clearly shows that the expected return on a stock is a function of both the market return and the stock's specific risk (as measured by beta) in relation to the market, as well as the risk-free rate. Simply equating the stock's expected return with the market return disregards these critical components.

B is incorrect. This option suggests an expected return of 19.91%, which significantly overestimates the stock's return. This calculation does not seem to follow the CAPM formula or any known financial principle.

**CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (g): Calculate and interpret the expected return of an asset using the CAPM/**

Q.1345 What is the covariance of an asset's returns with the market if the beta of the asset is 1.7 and the variance of market returns is 20%?

- A. 0.34
- B. 0.85
- C. 0.12

The correct answer is **A**.

Covariance of asset returns with the market = Beta × Variance of market returns

$$\text{Covariance of asset returns with the market} = 1.7 \times 0.20 = 0.34$$

B is incorrect. It suggests a covariance of 0.85, which does not align with the calculated value based on the given parameters. To arrive at a covariance of 0.85, either the beta or the variance of the market returns would have to be different from the values provided. This option does not accurately reflect the relationship between the asset's beta, the variance of market returns, and their resulting covariance.

C is incorrect. It proposes a covariance of 0.12, which is significantly lower than the calculated value of 0.34. A covariance of 0.12 would suggest a much weaker relationship between the asset's returns and the market returns than what is indicated by the given beta of 1.7 and market variance of 0.20.

**CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (e): Calculate and interpret beta.**

Q.1346 What is the market risk premium if the expected return on the market is 13%, the average stock's beta is 1, and the risk-free rate is 8%?

- A. 9%
- B. 13%
- C. 5%

The correct answer is C.

Market risk premium = Expected return of market – Risk-free rate of return

$$\text{Market risk premium} = 13\% - 8\% = 5\%$$

A is incorrect. It suggests a market risk premium of 9%, which does not align with the given values. The calculation of the market risk premium does not involve adding the risk-free rate to the expected return on the market or any other method that would result in a 9% premium.

B is incorrect. It confuses the expected return on the market with the market risk premium. The expected return on the market is indeed 13%, but this is not the market risk premium. The market risk premium is the excess return over the risk-free rate that investors require as compensation for the additional risk of investing in the market as a whole. It is calculated by subtracting the risk-free rate from the expected market return, resulting in a 5% premium, not the full 13% expected market return.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.1351 A stock is trading at \$35 and its expected price next year is \$47. Determine whether the stock is undervalued or overvalued if the market risk premium is 8%, the risk-free rate is 5% and the Beta of the stock is 1.8.

- A. Undervalued
- B. Overvalued
- C. Properly valued

The correct answer is **A**.

The stock is undervalued because the forecasted return is greater than the required rate of return. The forecasted return is calculated as follows:

$$\text{Forecasted Return} = \frac{\text{Expected Price Next Year} - \text{Current Price}}{\text{Current Price}}$$

$$\text{Forecasted Return} = \frac{47 - 35}{35} = 34.3\%$$

The required rate of return can be calculated using the Capital Asset Pricing Model (CAPM), which is given by:

$$\text{Required Rate of Return} = \text{Risk-Free Rate} + \beta(\text{Market Risk Premium})$$

$$\text{Required Rate of Return} = 5\% + 1.8(8\%) = 5\% + 14.4\% = 19.4\%$$

B is incorrect. This option incorrectly suggests that the stock is overvalued, which would imply that the forecasted return is less than the required rate of return. However, as calculated, the forecasted return is significantly higher than the required rate of return, indicating that the stock is undervalued, not overvalued.

C is incorrect. Suggesting that the stock is properly valued would mean that the forecasted return equals the required rate of return. In this case, the forecasted return significantly exceeds the required rate of return, indicating that the stock is undervalued rather than being properly valued.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.1352 The standard deviation of a portfolio is 15%. If the portfolio's return is 22%, and the risk-free return is 6%, then the Sharpe ratio of the portfolio is *closest to*:

- A. 0.91.
- B. 1.07.
- C. 1.46.

The correct answer is **B**.

$$\text{Sharpe ratio} = \frac{(\text{Portfolio return} - \text{Risk-free return})}{\text{Standard deviation of portfolio}}$$

$$\text{Sharpe ratio} = \frac{(22\% - 6\%)}{15\%} = 1.07$$

A is incorrect. A Sharpe ratio of 0.91 would suggest a different set of inputs, possibly a lower portfolio return or a higher standard deviation. It does not accurately reflect the given scenario where the portfolio return is 22%, the risk-free return is 6%, and the standard deviation is 15%.

C is incorrect. A Sharpe ratio of 1.46 would imply a significantly higher excess return (portfolio return minus risk-free return) relative to the portfolio's risk (standard deviation) than what is provided by the given data. This would require either a higher portfolio return, a lower risk-free rate, or a lower standard deviation than those specified in the question.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (i): Calculate and interpret the Sharpe ratio, Treynor ratio, M2, and Jensen's alpha.

Q.1353 Which of the following measures excess return per unit of total risk?

- A. Jensen's alpha
- B. Treynor ratio
- C. Sharpe ratio

The correct answer is **C**.

The Sharpe ratio is defined as the difference between the returns of the investment and the risk-free return, divided by the standard deviation of the investment (i.e., its volatility). Mathematically:

$$\text{Sharpe ratio} = \frac{R_p - R_f}{\sigma_p}$$

It represents the additional amount of return that an investor receives per unit of increase in risk.

On the contrary, Jensen's alpha and the Treynor ratio use beta (a measure of systematic risk, not total risk) instead of the standard deviation.

A is incorrect. Jensen's alpha measures the excess return of a portfolio over the expected return predicted by the Capital Asset Pricing Model (CAPM). While it does account for the performance of an investment relative to its expected risk (as defined by its beta), it does not measure the excess return per unit of total risk. Instead, Jensen's alpha focuses on systematic risk and the portfolio's ability to outperform based on that risk factor alone, without considering the total risk (both systematic and unsystematic) of the portfolio.

B is incorrect. The Treynor ratio, similar to Jensen's alpha, focuses on the return of an investment relative to its systematic risk, as measured by beta. The formula for the Treynor ratio is:

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (i): Calculate and interpret the Sharpe ratio, Treynor ratio, M2, and Jensen's alpha.

Q.1354 Which of the following is the appropriate action for a stock which is currently trading at \$50 with an expected price next year of \$56 and a required rate of return of 10%?

- A. Buy the stock because it is undervalued.
- B. Buy the stock because it is overvalued.
- C. Sell the stock because it is undervalued.

The correct answer is **A**.

The correct action for undervalued stocks is to buy them.

$$\text{Expected Return} = \frac{\text{Expected Price Next Year} - \text{Current Price}}{\text{Current Price}}$$

Substituting the given values:

$$\text{Expected Return} = \frac{56 - 50}{50} = 0.12 \text{ or } 12\%$$

The expected return of 12% is higher than the required rate of return of 10%. This indicates that the stock is undervalued, as it is expected to provide a higher return than what is required.

B is incorrect. It suggests buying the stock on the premise that it is overvalued, which contradicts the calculation and analysis. An overvalued stock would have an expected return lower than the required rate of return, suggesting that the stock is priced higher than its perceived value. This is not the case here, as the expected return is higher than the required rate of return, indicating undervaluation rather than overvaluation.

C is incorrect. It suggests selling the stock due to it being undervalued, which is a contradictory action. Selling an undervalued stock would not be the appropriate action based on the principle of seeking to maximize returns on investments.

**CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (g): Calculate and interpret the expected return of an asset using the CAPM.**

Q.1355 The 10-year US Treasury rate is 5% and the return on the S&P 500 index is 10%. If the beta of Orange is 1.2, the expected return on shares of Orange Inc. is *closest to*:

- A. 11%.
- B. 15%.
- C. 17%.

The correct answer is **A**.

According to CAPM,

$$\text{Expected return of stock} = \text{Risk-free rate} + \text{Beta}(\text{Market risk} - \text{Risk-free rate})$$

$$E_r = 5\% + 1.2(10\% - 5\%) = 11\%$$

10-year US Treasury bonds are considered the risk-free rate and the S&P 500 return is considered the market return.

B is incorrect. An expected return of 15% would imply a different set of inputs into the CAPM formula, specifically a higher market risk premium or a higher beta, neither of which is provided in the question. This option does not accurately reflect the calculation based on the given data.

C is incorrect. An expected return of 17% significantly overestimates the return based on the given inputs. This would require either a much higher market return or a significantly higher beta value for Orange Inc., which is not supported by the information provided. This option does not follow the CAPM calculation as specified in the question.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (g): Calculate and interpret the expected return of an asset using the CAPM.

Q.1356 Which of the following statements is appropriate regarding the plot of undervalued stocks on the security market line?

- A. Undervalued stocks plot above the SML.
- B. Undervalued stocks plot under the SML.
- C. Stocks always plot on the SML.

The correct answer is **A**.

An undervalued stock will plot above the security market line. In other words, if the plot is above the line, it indicates that the stock is underpriced.

B is incorrect. The actual return is less than what would be expected for its level of risk, making it a less attractive investment. Investors seek higher returns for higher risk, and a stock below the SML does not meet this criterion, as it offers lower returns for its risk level.

C is incorrect. This option suggests that all stocks always plot on the SML, which is not accurate. While the SML represents the market's expectation of return for a given level of risk (beta), individual securities can and do plot above or below the SML. Securities plotting on the SML are considered fairly valued, as their expected returns align with the market's required return for their level of risk. However, in reality, securities often deviate from this line due to various factors, including market inefficiencies, leading to undervalued or overvalued stocks.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.2875 An unleveraged portfolio is constructed of two assets, including a risky asset with a standard deviation of 18% and a risk-free asset. If the weight of the risk-free asset in the portfolio is 35%, then the standard deviation of the portfolio is *closest to*:

- A. 18%.
- B. 6.3%.
- C. 11.7%.

The correct answer is **C**.

A risk-free asset has a standard deviation of zero.

Standard deviation of the portfolio = Weight of risky asset × Standard deviation of risky asset

$$\text{Standard deviation of the portfolio} = 0.65 \times 18\% = 11.7\%$$

A is incorrect. This option suggests that the standard deviation of the portfolio is the same as the standard deviation of the risky asset (18%). This interpretation ignores the impact of including a risk-free asset in the portfolio. The presence of a risk-free asset, which has a 0% standard deviation, reduces the overall risk of the portfolio compared to holding only the risky asset.

B is incorrect. The calculation that might lead to a 6.3% standard deviation seems to misunderstand the weights or the calculation method. A standard deviation of 6.3% would imply a much higher weight on the risk-free asset than 35% or a misunderstanding of how to combine the standard deviations of portfolio components.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.2876 Which of the following is the most appropriate explanation of the Capital Allocation Line (CAL)?

- A. The Capital Allocation Line presents the investor's risk tolerance given risky assets and risk-free assets.
- B. The Capital Allocation Line demonstrates the set of portfolios within the investor's budget.
- C. The Capital Allocation Line presents the possible risk and return combinations of risky assets and risk-free assets.

The correct answer is **C**.

The Capital Allocation Line (CAL) is a graph created by investors to measure the risk of risky and risk-free assets. The graph displays the return to be made by taking on a certain level of risk. Its slope is known as the "reward-to-variability ratio."

A is incorrect. The CAL itself does not present the investor's risk tolerance but rather shows all possible combinations of risk and return that an investor can achieve by mixing a risk-free asset with a portfolio of risky assets. The investor's risk tolerance is reflected in the choice of a specific point on the CAL, not the line itself.

B is incorrect. The statement that the Capital Allocation Line demonstrates the set of portfolios within the investor's budget is misleading. The CAL does not directly relate to the investor's budget but to the risk-return trade-off of combining a risk-free asset with a portfolio of risky assets. While an investor's budget or initial investment capital might limit the amount they can invest, the CAL conceptually represents the efficiency frontier of risk and return combinations achievable through diversification and the inclusion of a risk-free asset. It is more about optimizing returns for a given level of risk rather than being constrained by a budget.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.2878 A portfolio manager is constructing a portfolio composed of two assets. Asset A is a risky asset with an expected return of 14% and a standard deviation of 22%, and asset B is a risk-free asset with an expected return of 9%. If the portfolio manager increases the weight of the risky asset to 130%, then the expected return of the portfolio is *closest to*:

- A. 18.2%.
- B. 15.5%.
- C. 16.7%.

The correct answer is **B**.

Expected return of the portfolio = (Weight of Asset A × Return of Asset A) + (Weight of Asset B × I)

$$\text{Expected return of the portfolio} = (1.3 \times 14\%) + (-0.3 \times 9\%) = 15.5\%$$

A is incorrect. The calculation of 18.2% does not correctly apply the weights of the assets in the portfolio. It seems to misunderstand the impact of leveraging (borrowing at the risk-free rate to invest more in the risky asset) on the expected return of the portfolio.

C is incorrect. The calculation leading to 16.7% does not align with the given weights of the assets in the portfolio. This option might result from a miscalculation or misunderstanding of how the weights of the assets influence the overall expected return of the portfolio.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.2879 Amy Stevenson, CFA, has recently emigrated to Germany. She believes the German stock markets are information efficient. Which of the following is *least likely* going to be her investing strategy?

- A. Passive investing
- B. Investing in index funds
- C. Active investing

The correct answer is **C**.

Since Amy believes the markets are information efficient i.e. all the information is already reflected in the market prices, then active investing is going to perform worse than passive investing after commissions.

A is incorrect. Passive investing is a strategy that is well-aligned with the belief in market efficiency. This approach involves holding a diversified portfolio of stocks without attempting to outguess the market. Passive investors typically invest in index funds or ETFs that track a market index, relying on the market's overall growth over time rather than trying to pick individual winners. Since Amy believes in market efficiency, passive investing would be a logical approach for her, as it is based on the premise that it is not possible to consistently outperform the market through active stock selection or timing.

B is incorrect. Investing in index funds is another strategy that aligns with the belief in market efficiency. Index funds aim to replicate the performance of a specific market index by holding all or a representative sample of the securities in the index. This strategy benefits from the market's overall returns over time, minimizing the costs and risks associated with attempting to outperform the market through active management. Since Amy believes that the German stock markets are information efficient, investing in index funds would be a suitable strategy for her, as it acknowledges that all available information is already reflected in stock prices, making it unlikely for active strategies to consistently achieve superior returns.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.2880 Which of the following statements is *least likely* accurate?

- A. When assets are perfectly correlated, an investor can diversify its risk.
- B. Firm-specific risk can be decreased with diversification.
- C. The risk that cannot be diversified is called systematic risk.

The correct answer is **A**.

Only assets that are not perfectly correlated can diversify a portfolio. Statements B) and C) are true.

B is incorrect. It is not correlated with market risk. By investing in a variety of assets, the impact of any one firm's performance on the portfolio's overall performance is minimized. This is because the negative performance of one or a few securities can be offset by the positive performance of others in the portfolio, thereby reducing the overall impact of firm-specific risks.

C is incorrect. The statement that the risk that cannot be diversified is called systematic risk is true. Systematic risk, also known as market risk, is the risk inherent to the entire market or market segment. This type of risk is caused by factors that affect all companies, such as economic, political, and social changes, and cannot be eliminated through diversification. No matter how diversified a portfolio is, it cannot escape the effects of systemic factors that impact the entire market. This is why systematic risk remains a critical consideration for all investors, as it represents the inherent risk associated with market-wide fluctuations that cannot be mitigated simply through diversification.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.2881 A manager values a project that is to be financed with 58% equity and 42% debt at the cost of 8.4%. Suppose the market return is 6.5%, the risk-free rate is 5%, and the beta is 0.8, then the expected return of equity is *closest to*:

- A. 9.6%.
- B. 6.20%.
- C. 10.5%.

The correct answer is **B**.

The question is asking to estimate the expected return of equity calculated as follows:

$$E(R_i) = R_f + \beta_i[E(R_m) - R_f] = 5\% + 0.8(6.5\% - 5\%) = 6.20\%$$

A is incorrect. The option suggesting 9.6% as the expected return of equity does not align with the calculation based on the CAPM formula. This figure likely overlooks the specific values provided for the risk-free rate, market return, and beta, leading to an inaccurate result.

C is incorrect. The option indicating 10.5% as the expected return of equity significantly overestimates the impact of the market risk premium on the equity's return.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (g): Calculate and interpret the expected return of an asset using the CAPM.

Q.2883 The expected return of the Karachi Stock exchange is 17%, and the rate on Pakistan's risk-free bonds is 7.5%. Suppose the beta of Bata Corporation shares is 0.75, then the required rate of return on Bata Corporation's shares is *closest to*:

- A. 14.63%.
- B. 20.25%.
- C. 16.73%.

The correct answer is **A**.

The required rate of return on shares is calculated using the Capital Asset Pricing Model (CAPM).

$$\text{Required rate of return} = \text{Risk-free rate} + \text{Beta} (\text{Market Return} - \text{Risk-free rate})$$

$$\text{Required rate of return} = 7.5\% + 0.75(17\% - 7.5\%) = 14.63\%$$

B is incorrect. 20.25% significantly overestimates the required rate of return. This figure does not accurately reflect the calculation based on the given beta of 0.75 and the difference between the market return and the risk-free rate. It suggests a much higher level of risk or expected market return than what is provided, which is not supported by the given data.

C is incorrect. 16.73% also does not accurately reflect the calculation based on the CAPM formula.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (g): Calculate and interpret the expected return of an asset using the CAPM.

Q.2885 Which of the following portfolios is/are most appropriately priced?

- I. A portfolio with an estimated return above the securities market line (SML).
- II. A portfolio with an estimated return plotted on the SML.
- III. A portfolio with an estimated return below the SML.

- A. Portfolios I & II
- B. Portfolio II
- C. Portfolios II & III

The correct answer is **B**.

The portfolio is underpriced if the portfolio's estimated return is above the SML. Conversely, a portfolio with an estimated return below the SML is overpriced.

The portfolio with an estimated return plotted on the SML is properly priced.

A is incorrect. It offers a higher return for its level of risk than what the market would typically offer (as per the SML). Investors seeking to maximize their returns for a given level of risk would find such a portfolio more attractive, as it provides a higher expected return than predicted by its beta. This discrepancy indicates that the market has not fully incorporated the asset's information into its price, making it underpriced.

C is incorrect. This option includes portfolios with an estimated return below the SML, suggesting they are also appropriately priced. However, a portfolio with an estimated return below the SML is considered overpriced. It offers a lower return for its level of risk than the market average. This situation implies that the investor is not being compensated adequately for the risk undertaken, as the expected return does not meet the risk-return trade-off depicted by the SML. Such portfolios are less attractive to risk-averse investors, as they can find better returns for the same level of risk elsewhere on the SML.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.2886 Which of the following measures of risk-adjust returns is *least likely* to use beta?

- A. Treynor measure
- B. Jensen's alpha
- C. M-squared measure

The correct answer is **C**.

M-squared and Sharpe ratio measures of risk-adjust returns use standard deviation or total risk. Treynor and Jensen's alpha use beta or systematic risk.

A is incorrect. The Treynor measure specifically uses beta to evaluate the risk-adjusted return of a portfolio. It divides the excess return of the portfolio over the risk-free rate by the portfolio's beta. The Treynor measure focuses on systematic risk, which is the risk inherent to the entire market or market segment. Beta is a measure of how much a portfolio's returns are expected to respond to changes in the overall market returns. Therefore, the Treynor measure is directly concerned with assessing how well a portfolio compensates its investors, given the level of systematic risk it is exposed to.

B is incorrect. Jensen's alpha also uses beta in its calculation. It measures the average return on a portfolio over and above that predicted by the Capital Asset Pricing Model (CAPM), given the portfolio's beta and the average market return. This metric is a way to determine if a portfolio is outperforming the market-adjusted for its level of systematic risk. Jensen's alpha takes into account the portfolio's sensitivity to market movements, as represented by its beta, to isolate the portion of returns attributable to the portfolio manager's active decision-making. It is a measure of the portfolio's performance on a risk-adjusted basis, specifically focusing on systematic risk.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (i): Calculate and interpret the Sharpe ratio, Treynor ratio, M2, and Jensen's alpha.

Q.2887 If the covariance between the market portfolio and Arthemisca's shares is 0.46, the standard deviation of Arthemisca's shares is 0.9, and the standard deviation of market returns is 0.7, then Arthemisca's shares beta is *closest to*:

- A. 0.94.
- B. 0.57.
- C. 1.3.

The correct answer is **A**.

$$\text{Beta} = \frac{\text{Covariance between stock and market}}{\text{Market variance}}$$

$$\text{Beta} = \frac{0.46}{0.7^2} = 0.938$$

B is incorrect. A beta of 0.57 would suggest that Arthemisca's shares are significantly less volatile than the market, which does not align with the given covariance and standard deviations. A beta value of 0.57 would imply a much lower covariance or a much higher market variance than provided.

C is incorrect. A beta of 1.3 would indicate that Arthemisca's shares are more volatile than the market. This conclusion does not match the calculation based on the given covariance and market variance. A beta of 1.3 would require a higher covariance or a lower market variance than the values provided in the question.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (e): Calculate and interpret beta.

Q.2888 A portfolio manager is constructing a portfolio composed of two assets. Asset A is a risky asset with an expected return of 14% and a standard deviation of 22% whereas asset B is a risk-free asset with a return of 9%. Suppose the portfolio manager increases the weight of the risky portfolio to 130%, then the risk of the portfolio is *closest to*:

- A. 28.6%.
- B. 22%.
- C. 53.4%.

The correct answer is **A**.

The risk or the standard deviation of the portfolio = Weight of risky asset × Standard deviation of

$$\text{The risk or the standard deviation of the portfolio} = 1.3 \times 22\% = 28.6\%$$

B is incorrect. It suggests that the risk of the portfolio remains the same as the standard deviation of the risky asset alone, at 22%. This option fails to account for the increased weight of the risky asset in the portfolio, which amplifies the overall risk. The risk of a portfolio that includes a leveraged position in a risky asset cannot be the same as the risk of the risky asset itself when its weight exceeds 100%.

C is incorrect. It significantly overestimates the risk of the portfolio. A risk of 53.4% would suggest an even higher level of leverage or a combination of risky assets with extremely high volatility, which is not the case presented here. The calculation for option C does not align with the given scenario where the portfolio's risk is determined solely by the leveraged investment in a single risky asset with a known standard deviation.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II. LOS (f): Explain the capital asset pricing model (CAPM), including its assumptions, and the security market line (SML).

Q.3435 The Sharpe ratio is best described as:

- A. The excess return generated per unit of total risk.
- B. The excess return generated per unit of systematic risk.
- C. The excess return generated per unit of unsystematic risk.

The correct answer is **A**.

The Sharpe ratio measures excess return per unit of total risk, because standard deviation (the denominator) represents total risk.

B is incorrect. This option describes the excess return generated per unit of systematic risk, which is more accurately associated with the Beta coefficient or the Treynor ratio, not the Sharpe ratio. Systematic risk, also known as market risk, is the risk inherent to the entire market or market segment. The Sharpe ratio, however, uses the standard deviation of the portfolio's excess return in its calculation, which includes both systematic and unsystematic risk, not just systematic risk.

C is incorrect. This option suggests that the Sharpe ratio measures the excess return generated per unit of unsystematic risk. Unsystematic risk, also known as specific risk, is the risk that is unique to a particular company or industry. However, the Sharpe ratio uses the standard deviation of the portfolio's excess return as its denominator, which encompasses both systematic and unsystematic risk.

CFA Level I, Portfolio Management, Learning Module 2: Portfolio Risk & Return: Part II.
LOS (i): Calculate and interpret the Sharpe ratio, Treynor ratio, M2, and Jensen's alpha.

Learning Module 3: Portfolio Management: An Overview

Q.123 Which of the following statements is *least likely* accurate regarding a defined contribution plan?

- A. Future benefits to the account are guaranteed.
- B. Future benefits fluctuate based on investment earnings.
- C. Individual accounts are set up for participants and benefits are based on the amounts credited to these accounts.

The correct answer is **A**.

In a defined contribution plan, only contributions to the account are guaranteed, not the future benefits. A defined contribution plan is a retirement plan in the employee's name usually funded by both the employee and the employer. With DC plans, individuals will invest part of their wages while working, expecting to draw on the accumulated funds to provide income during retirement. The employee accepts the investment and inflation risk and is responsible for ensuring that there are enough assets in the plan to meet their needs upon retirement.

B is incorrect. The fluctuation of benefits is a characteristic feature of these plans, as the retirement income depends on the performance of the investments chosen by the account holder. Therefore, while this statement is accurate, it does not fit the criteria of being the least accurate statement about defined contribution plans.

C is incorrect. This option accurately describes a feature of defined contribution plans, where individual accounts are set up for participants, and benefits are based on the amounts credited to these accounts, including both contributions and investment earnings.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (d): Describe defined contribution and defined benefit pension plans.

Q.124 Which of the following is the *best* definition of mutual funds?

- A. Funds from many individual investors that are aggregated for the purposes of investment.
- B. A type of professionally managed investment fund that pools money from many investors to purchase securities.
- C. A limited partnership of investors that uses high-risk methods, such as investing with borrowed money, in hopes to realize large capital gains.

The correct answer is **B**.

A mutual fund is a type of professionally managed investment fund that pools money from many investors to purchase securities. Each investor in the fund has a pro-rata claim on the income and value of the fund.

A is incorrect. While this option highlights the pooling of funds from many individual investors for investment purposes, it lacks the specificity of mentioning the professional management aspect and the goal of purchasing securities. Mutual funds are not just any pooled investment; they are specifically structured to be professionally managed and to invest in a diversified portfolio of securities such as stocks, bonds, and other financial instruments. The definition provided in option A is too broad and could apply to various types of pooled investments, not distinctly identifying the unique characteristics of mutual funds.

C is incorrect. Hedge funds are indeed pooled investments, but they are distinct from mutual funds in several key aspects. Hedge funds often employ high-risk investment strategies, including the use of leverage (borrowed money), derivatives, and short-selling, with the aim of generating high returns. They are typically available only to accredited or qualified investors due to their riskier nature and higher minimum investment requirements. Mutual funds, on the other hand, are accessible to a broader range of investors and generally focus on a diversified portfolio to manage risk, rather than seeking high returns through high-risk methods.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (f): Describe mutual funds and compare them with other pooled investment products.

Q.760 Which of the following statements is *most likely* accurate?

- A. Insurance companies need to invest the premiums received for the policies written to allow them to pay bonuses to their investors and meet operational expenses.
- B. Investment companies that manage mutual funds are collective financial institutions. Investors pool their capital to have it invested by professional managers with high liquidity needs to meet redemption requirements.
- C. Banks need to invest their excess reserves (i.e., when deposits have not been used to make loans) more in equities and other relatively less liquid assets to earn a return on its services that exceeds the rate of interest it pays on its deposits.

The correct answer is **B**.

Investment companies that manage mutual funds are collective financial institutions. Investors pool their capital to have it invested by professional managers with high liquidity needs to meet redemption requirements.

A is incorrect. As insurance companies' main investment purpose is to meet claims rather than paying bonuses

C is incorrect. Banks need to be conservative while making investments of excess reserves.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (e): Describe aspects of the asset management industry.

Q.762 Which of the following is *least likely* a characteristic of open-ended mutual funds?

- A. An open-end structure makes it easy to grow in size but creates pressure on the portfolio manager to manage the cash inflows and outflows.
- B. In open-end funds, new shares are created and sold at a premium or a discount to net assets values depending on the demand for the shares.
- C. Open-end funds accept new investment money and issue additional shares to existing or new investors. Therefore, the number of outstanding shares changes after every new investment.

The correct answer is **B**.

In open-end funds, new shares are issued at the net asset value of the fund at the time of investment. An open-end fund is a collective investment scheme that can issue and redeem shares at any time. An investor will generally purchase shares in the fund directly from the fund itself rather than from the existing shareholders.

It contrasts with a closed-end fund, which typically issues all the shares it will issue at the outset, with such shares usually being tradable between investors thereafter. Unlike open-end funds in which new shares are created and sold at the current net asset value per share, closed-end funds can sell for a premium or discount to net asset value depending on the demand for the shares.

A is incorrect. The open-end structure allows for the fund to grow in size as new investments are made, with the fund issuing new shares to accommodate this growth. However, this can indeed create challenges for the portfolio manager, who must manage cash inflows and outflows effectively to maintain the fund's investment strategy and performance. Managing these cash flows is a critical aspect of operating an open-ended fund, as significant inflows or outflows can impact the fund's asset allocation and potentially its returns.

C is incorrect. This option also accurately describes a feature of open-ended mutual funds. Open-end funds are designed to accept new investment money at any time, issuing additional shares to accommodate new or existing investors. This flexibility is a key advantage of open-ended funds, allowing investors to enter or exit the fund according to their investment needs. The number of outstanding shares in an open-ended fund is not fixed and changes with each new investment or redemption, reflecting the fund's ability to adapt to investor demand while maintaining its investment objectives.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (f): Describe mutual funds and compare them with other pooled investment products.

Q.763 Which of the following best describes all of the major types of mutual funds differentiated by the asset type they invest in?

- A. Money market funds and stock mutual funds.
- B. Money market funds, stock mutual funds, and hybrid or balanced funds.
- C. Money market funds, stock mutual funds, bond mutual funds and hybrid or balanced funds.

The correct answer is **C**.

There are four different types of mutual funds classified based on the type of assets they invest in: money market funds, stock mutual funds, bond mutual funds, and hybrid or balanced funds.

A is incorrect. This option only mentions money market funds and stock mutual funds, omitting bond mutual funds and hybrid or balanced funds. By excluding these two types, it fails to capture the full spectrum of mutual funds differentiated by asset type. Bond mutual funds play a crucial role in providing income and reducing portfolio volatility, while hybrid or balanced funds offer a diversified investment strategy that can adapt to changing market conditions. Therefore, this option does not accurately describe all the major types of mutual funds.

B is incorrect. Although this option includes money market funds, stock mutual funds, and hybrid or balanced funds, it neglects to mention bond mutual funds. Bond mutual funds are a significant category that invests in various debt securities, offering investors a source of regular income and typically lower risk compared to stock mutual funds. The absence of bond mutual funds in this option means it does not fully represent the range of mutual funds classified by the asset types they invest in. Bond mutual funds are essential for investors seeking to diversify their portfolios, reduce risk, and secure a steady income stream, making their omission a critical oversight.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (f): Describe mutual funds and compare them with other pooled investment products.

Q.764 Which of the following is considered as the major difference between a bond mutual fund and a money market fund?

- A. The taxability of these two funds.
- B. The maturity of the underlying assets.
- C. The nature of the assets they invest in.

The correct answer is **B**.

In a money market fund, the maturity is as short as overnight and rarely longer than 90 days. However, a bond mutual fund holds bonds with maturities as short as one year and as long as 30 years.

A is incorrect. While the taxability of bond mutual funds and money market funds can differ, especially if a money market fund qualifies as a tax-exempt fund by investing in municipal securities, taxability is not the major distinguishing factor between these two types of funds. Both types of funds can have variations in tax implications based on the specific assets they hold. Therefore, the primary difference is not in their taxability but in the maturity of the underlying assets they invest in.

C is incorrect. Although bond mutual funds and money market funds invest in different types of assets, with bond mutual funds typically investing in a broader range of debt securities and money market funds focusing on short-term, high-quality instruments, the nature of the assets is not the most significant difference. The key distinction lies in the maturity of these assets rather than their nature. Both types of funds invest in debt instruments, but the duration and risk profiles of these instruments vary significantly, which is a critical factor for investors to consider when choosing between these funds.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (f): Describe mutual funds and compare them with other pooled investment products.

Q.765 Which of the following is *least likely* accurate in the context of actively managed stock mutual funds?

- A. Tax implications are lower in actively managed funds than in index funds.
- B. Higher fees are charged for actively managed funds (reflecting its goal to outperform the index).
- C. More research is conducted in actively managed funds to select the best securities, and they are traded more often than index funds.

The correct answer is **A**.

Mutual funds are required to distribute all income and capital gains realized in the portfolio, so the actively managed fund tends to have more opportunity to realize capital gains. This results in higher taxes relative to an index fund, which uses a buy-and-hold strategy. In addition, management fees for actively managed funds are higher to reflect their goal of outperforming an index. The higher fees are required to pay for the research conducted to actively select securities.

B is incorrect. The statement that higher fees are charged for actively managed funds, reflecting its goal to outperform the index, is accurate. Actively managed funds incur additional costs due to the intensive research and frequent trading activities undertaken by fund managers in an attempt to achieve superior returns. These costs are passed on to investors in the form of higher management fees or expense ratios. The rationale behind the higher fees is to compensate for the expertise and efforts of the fund managers and their research teams who analyze market trends, economic conditions, and individual securities to make informed investment decisions.

C is incorrect. The statement that more research is conducted in actively managed funds to select the best securities, and they are traded more often than index funds, accurately describes the nature of actively managed funds. The primary objective of these funds is to outperform a benchmark index, which necessitates a proactive investment strategy. This strategy involves conducting extensive research to identify securities that are expected to provide superior returns. Thus, this option accurately reflects the operational differences between actively managed funds and index funds.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (e): Describe aspects of the asset management industry.

Q.766 In which of the following investment products are creation units *most likely* issued?

- A. Open-end mutual funds.
- B. Closed-end mutual funds.
- C. Exchange-traded funds (ETF).

The correct answer is **C**.

ETFs use a mechanism involving creation units, which are large blocks of ETF shares (typically between 50,000 and 100,000 shares). Authorized participants, usually large institutional investors, deposit a specified portfolio of securities and other assets with the ETF sponsor, and in return, they receive creation units of the ETF. This process facilitates the ETF's liquidity and price tracking of the underlying assets or index.

A is incorrect. In open-end mutual funds, shares are directly issued to investors by the fund itself and are not traded between investors on an exchange. The number of shares is not fixed and can vary as investors buy into or redeem shares from the fund. Therefore, the concept of creation units, which are specific large blocks of shares, is not applicable.

B is incorrect. Closed-end mutual funds do not utilize creation units. These funds issue a fixed number of shares through an initial public offering (IPO), after which these shares are traded between investors on an exchange. Unlike ETFs, the closed-end fund does not continuously issue new shares or redeem them. The number of shares remains constant, except in certain cases like secondary offerings, but this does not involve the creation unit process.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (f): Describe mutual funds and compare them with other pooled investment products.

Q.768 Which of the following is *least likely* a similarity between buyout funds and venture capital funds?

- A. They both seek to only acquire a minority stake in the firms they invest in.
- B. They both take control of the board of the companies in which they invest.
- C. They both make investments with finite investment horizons (usually 3 to 5 years).

The correct answer is **A**.

Similar to buyout funds, venture capital funds typically have finite investment horizons (usually 3 to 5 years). Also, they both take control of the board of the companies in which they invest. However, buyout funds almost always buy 100% of a company, whereas venture capital firms only acquire a minority stake - less than 50%. Therefore, option A is the least likely answer.

B is incorrect. It states that both types of funds take control of the board of the companies in which they invest. While this is generally true for buyout funds due to their majority or full ownership, venture capital funds, despite often holding a minority stake, may still seek board representation or control as part of their investment terms. However, the extent of control can vary significantly between the two types of funds, with buyout funds typically having a more dominant influence due to their larger equity stakes.

C is incorrect. It correctly identifies a similarity between buyout funds and venture capital funds. Both types of investment funds operate with finite investment horizons, usually ranging from 3 to 5 years, after which they seek to exit their investments through various means such as an initial public offering (IPO), sale to another company, or sale to another investor. This finite investment horizon is a characteristic of private equity investing, which includes both buyout and venture capital strategies, as investors aim to realize a return on their investments within a specific timeframe.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (e): Describe aspects of the asset management industry.

Q.1265 The government of Canada and the government of Turkey want to establish a fund that will invest in small-medium enterprises in Turkey. Which of the following funds will they choose?

- A. Mutual Fund.
- B. Sovereign Fund.
- C. Endowment Fund.

The correct answer is **B**.

Sovereign funds are established by governments for investment purposes. They are state-owned investment funds or entities that invest in financial or real assets and have varying investment horizons and objectives based on funding the government's goals. Mutual funds and endowment funds are not established by countries.

A is incorrect. Mutual funds are investment vehicles that pool money from many investors to purchase a diversified portfolio of stocks, bonds, or other securities. They are typically managed by private entities and cater to individual investors rather than serving as a tool for governmental strategic investments. While mutual funds can invest in a wide range of assets, including those in emerging markets or specific sectors, they do not have the sovereign backing or the strategic focus on national economic development that a sovereign wealth fund would have in the context of the governments of Canada and Turkey looking to invest in SMEs in Turkey.

C is incorrect. They are not established by governments for national investment purposes. The goal of investing in SMEs in Turkey to foster economic development aligns more closely with the objectives and capabilities of a sovereign wealth fund.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (f): Describe mutual funds and compare them with other pooled investment products.

Q.1266 Which of the following *most likely* has the highest risk tolerance and lowest liquidity needs?

- A. Banks.
- B. Endowment funds.
- C. Insurance companies.

The correct answer is **B**.

Endowment funds have a higher risk tolerance and lower liquidity needs than insurance companies and banks.

Usually, endowment funds have long-term horizons with relatively low liquidity needs. For this reason, funds can tolerate short- and intermediate-term volatility provided that long-term returns meet or exceed investment objectives. Consequently, endowment funds may take advantage of less liquid investments, such as private equity, hedge funds, and other partnerships vehicles, which typically offer higher risk-adjusted return potential as compensation for forfeiture of liquidity.

A is incorrect. Banks operate in a highly regulated environment and are required to maintain a certain level of liquidity to meet the withdrawal demands of their depositors. Additionally, banks face strict capital requirements that limit their ability to engage in high-risk investments. While banks do invest in a variety of assets to generate returns, their risk tolerance is significantly lower than that of endowment funds, primarily due to the need to ensure the safety and availability of depositor funds.

C is incorrect. Insurance companies, similar to banks, are subject to regulatory requirements that influence their investment strategies. They need to maintain sufficient liquidity to pay out claims, which can arise unpredictably. This requirement constrains their ability to lock funds into long-term, illiquid investments. While insurance companies do invest in a diversified portfolio to manage risk and generate returns, their investment decisions are heavily influenced by the need to match assets with liabilities, both in terms of duration and liquidity. Consequently, their risk tolerance is lower than that of endowment funds, which do not face the same immediate financial obligations.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (e): Describe aspects of the asset management industry.

Q.1267 Liquidity needs of defined benefit plans are *most likely*:

- A. Low.
- B. High.
- C. Uncertain.

The correct answer is A.

Defined benefit plans (DB plans) are company-sponsored plans that offer employees a predefined benefit on retirement. They have a high-risk tolerance, a long horizon, and low liquidity needs.

B is incorrect. Suggesting that liquidity needs are high contradicts the fundamental characteristics of defined benefit plans. High liquidity needs are more characteristic of defined contribution plans, where the participants may choose to change their investment allocations or withdraw funds based on changing market conditions or personal circumstances.

C is incorrect. While it's true that market conditions and changes in workforce demographics (like unexpected early retirements or layoffs) can introduce some level of uncertainty in liquidity needs, defined benefit plans are designed with mechanisms to mitigate such uncertainties. Actuarial calculations and conservative funding strategies are employed to ensure that the plans can meet their obligations without requiring high levels of liquidity on short notice. Therefore, describing the liquidity needs as uncertain overlooks the structured and predictable nature of these plans' obligations and funding strategies.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (d): Describe defined contribution and defined benefit pension plans.

Q.1269 Which of the following parties *most likely* assumes the investment risk of a defined benefit plan?

- A. The employer.
- B. The employees.
- C. The investment managers.

The correct answer is **A**.

Defined benefit plans are plans in which the company promises to pay a certain annual amount (defined benefit) to the employee after retirement. Since the future value or benefits of the plan are promised, the investment risk of a defined benefit plan is assumed by the employer.

B is incorrect. Employees under a defined benefit plan do not bear the investment risk. The promise of a specific benefit upon retirement is made by the employer, who is also responsible for managing the plan's assets to ensure that this promise can be fulfilled. Employees' benefits are determined by the plan's formula and are not directly affected by the plan's investment performance. This arrangement shields employees from the risk associated with fluctuating market conditions and investment returns.

C is incorrect. While investment managers are responsible for making investment decisions on behalf of the defined benefit plan, they do not assume the investment risk. Their role is to manage the plan's assets according to the investment policy and objectives set forth by the employer or the plan's trustees. If the investments underperform, the responsibility to cover the shortfall and ensure that promised benefits can be paid rests with the employer, not the investment managers. Investment managers may be evaluated based on their performance and could be replaced for poor performance, but the ultimate financial risk remains with the employer.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (d): Describe defined contribution and defined benefit pension plans.

Q.1270 Which of the following portfolio management steps *most likely* requires a detailed investment policy statement?

- A. Planning step.
- B. Feedback step.
- C. Execution step.

The correct answer is **A**.

The planning step is the first in the investment process. Its aim is to understand the client's needs and develop an investment policy statement (IPS). An investment policy statement (IPS) details the analysis of the investor's objectives and constraints. The IPS should be reviewed regularly.

B is incorrect. The feedback step involves portfolio monitoring and rebalancing, performance measurement and reporting.

C is incorrect. The executive step involves asset allocation, security analysis and portfolio construction.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (b): Describe the steps in the portfolio management process.

Q.1271 Roy Smith wants to invest in equities of emerging markets to buy a new car with the returns. Which of the following will *most likely* provide these details about Smith?

- A. The investment policy statement.
- B. The prospectus of the investment fund.
- C. The brochure of the investment company.

The correct answer is **A**.

The investment policy statement (IPS) is a detailed analysis of the investor's objectives and constraints.

B is incorrect. The fund prospectus is a legal disclosure document that provides information about an investment offering to the public, contains information about the company, its management team, recent financial performance, and other related information that investors would like to know.

C is incorrect. A brochure of the investment company is simply a pamphlet giving information about the investment company.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (b): Describe the steps in the portfolio management process.

Q.1274 Shares of a mutual fund are valued on which of the following bases?

- A. The opening price of the fund's shares.
- B. The present value of future cash-flows.
- C. The net asset value of the fund's shares.

The correct answer is **C**.

Shares of a mutual fund are valued at their net asset value (NAV). It is valued as the total assets minus total liabilities. This amount is then divided by the number of shares that are outstanding.

A is incorrect. Valuing mutual fund shares based on the opening price of the fund's shares does not accurately reflect the fund's value throughout the trading day. Mutual funds consist of a portfolio of various assets, and the value of these assets can fluctuate throughout the day due to market movements. Therefore, relying solely on the opening price would not provide an accurate valuation of the fund's shares by the end of the trading day.

B is incorrect. While the present value of future cash flows is a valuation method used for assessing the value of individual securities or investment projects, it is not the basis for valuing shares of a mutual fund. Mutual funds are valued based on their current net asset value (NAV), which reflects the current market value of the fund's holdings rather than an estimation of future cash flows. This method ensures that the valuation of mutual fund shares is grounded in the present market conditions and the actual value of the fund's assets and liabilities.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (f): Describe mutual funds and compare them with other pooled investment products.

Q.1275 MZJ Income Fund is a mutual fund that does not issue new shares, and its shares can only be bought or sold like equity on the over-the-counter (OTC) market. Identify this type of mutual fund.

- A. Open-end fund.
- B. Closed-end fund.
- C. Exchange-traded fund.

The correct answer is **B**.

Closed-end funds are pooled investments that do not take new investments once the fund is established or funded.

A is incorrect. Open end funds accept new investment money and issue additional shares at a value equal to the net asset value of the fund at the time of investments.

C is incorrect. Exchange-traded funds (ETFs) are investment funds that trade on exchanges (similar to individual stocks) and are generally structured as open-end funds.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (f): Describe mutual funds and compare them with other pooled investment products.

Q.1276 Identify the type of funds that invests in US Treasury bills.

- A. Open-end fund.
- B. Bond mutual fund.
- C. Money market funds.

The correct answer is **C**.

US Treasury bills have maturities of less than one year. Money market funds invest in instruments that have maturities of 1 year or less.

A is incorrect. Open end funds are a category of mutual funds that accept new investments and issue additional shares at a value equal to the net asset value of the fund at the time of investment.

B is incorrect. A bond mutual fund is an investment fund consisting of a portfolio of individual bonds and, occasionally, preferred shares. A bond mutual fund holds bonds with maturities as short as one year and as long as 30 years (or more).

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (f): Describe mutual funds and compare them with other pooled investment products.

Q.1277 Which of the following funds are passively managed?

- A. Index funds.
- B. Stock mutual funds.
- C. Money market funds.

The correct answer is **A**.

Index funds match the performance of their benchmark index, i.e.: the S&P 500. These funds do not require active management.

B is incorrect. There are two types of stock mutual funds: actively managed and passively managed.

C is incorrect. Money market funds are mutual funds that invest in short-term money market instruments such as treasury bills, certificates of deposit, and commercial paper.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (e): Describe aspects of the asset management industry.

Q.1279 Which of the following fund is formed to invest in IPOs and initial stages of new companies and start-ups?

- A. Index fund.
- B. Hedge fund.
- C. Venture capital fund.

The correct answer is **C**.

Venture capital funds are specialized in investing in IPOs and early stages of new companies.

A is incorrect. Index funds match the performance of their benchmark index, i.e.: the S&P 500. These funds do not require active management.

B is incorrect. A hedge fund is a private investment vehicles that typically use leverage, derivatives, and long and short investment strategies.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (e): Describe aspects of the asset management industry.

Q.1332 Investors who believe market prices are informationally efficient will *most likely* follow which of the following investment strategy?

- A. Passive investment strategy
- B. Bottom-up strategy
- C. Active investment strategy

The correct answer is **A.**

Investors who believe that market prices are informationally efficient are more likely to follow a passive investment strategy. This approach involves investing in a diversified portfolio of securities and maintaining that portfolio over the long term without attempting to beat the market through frequent buying and selling. The passive strategy assumes that market prices already reflect all available information, so attempting to outperform the market through active management is seen as futile or inefficient.

B is incorrect. A bottom-up strategy involves selecting stocks based on the analysis of individual companies, with less emphasis on macroeconomic factors or market cycles. This approach is fundamentally at odds with the belief in informational efficiency, as it assumes that through detailed analysis, an investor can identify undervalued stocks and achieve superior returns. However, if markets are truly informationally efficient, as passive investors believe, then all known information about companies would already be reflected in their stock prices, rendering the bottom-up strategy ineffective at consistently outperforming the market.

C is incorrect. An active investment strategy seeks to outperform market benchmarks through stock selection, market timing, and other tactics based on forecasting and analysis. This approach directly contradicts the premise of informational efficiency, as it is predicated on the belief that it is possible to identify mispriced securities or predict market movements better than the collective market. For investors who believe in the Efficient Market Hypothesis, an active investment strategy would be considered both inefficient and unlikely to yield consistent excess returns, given that all available information is presumed to be already factored into stock prices.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.2824 Which of the following is *most likely* a type of investor with a high-risk tolerance and low liquidity needs?

- A. Banks.
- B. Insurance companies.
- C. Defined benefit pension plans.

The correct answer is C.

Defined benefit pension plans have high-risk tolerance and low(er) liquidity need. Banks and insurers have low-risk tolerance and high liquidity needs.

A is incorrect. Banks have a fundamentally different risk profile and liquidity needs compared to defined benefit pension plans. Banks are highly regulated entities that are required to maintain sufficient liquidity to meet short-term withdrawals and other financial obligations. They are also exposed to various types of risks, including credit risk, market risk, and operational risk, which necessitates a more conservative investment approach. Banks typically prioritize stability and liquidity over high returns, leading them to invest in lower-risk, highly liquid assets such as government securities and high-grade corporate bonds. This conservative investment strategy reflects their low-risk tolerance and high liquidity needs.

B is incorrect. Insurance companies, similar to banks, have low-risk tolerance and high liquidity needs, although their investment strategies may vary depending on the type of insurance they provide. Life insurance companies, for example, may have longer investment horizons and slightly higher risk tolerance compared to property and casualty insurers, but overall, insurance companies must ensure they have sufficient liquidity to pay out claims. This requirement influences their investment decisions, leading them to allocate a significant portion of their portfolio to liquid, lower-risk assets. While they may invest in a broader range of assets than banks, including equities and real estate, the need to maintain liquidity to cover potential claims limits their ability to take on high-risk investments.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (c): Describe types of investors and distinctive characteristics and needs of each.

Q.2825 Which of the following is the most appropriate income need of a bank as an investor?

- A. Pay interests.
- B. Finance daily expenses.
- C. Pay pension benefits to its employees.

The correct answer is **A**.

Banks invest mostly to pay interest to the depositors. Banks are financial intermediaries that accept deposits and lend money. Banks often have excess reserves that are invested in relatively conservative and very short-duration fixed-income investments, with a goal of earning an excess return above interest obligations due to depositors.

B is incorrect. Financing daily expenses through investment income is not the primary income need of a bank as an investor. While banks do incur daily operational expenses, these are generally covered by the bank's net interest income (the difference between interest earned on loans and investments and interest paid to depositors), fees, and other sources of revenue. Investments are primarily aimed at generating returns to cover interest obligations to depositors and not for directly financing daily operational expenses.

C is incorrect. Paying pension benefits to its employees, although a significant financial obligation for a bank, is not the primary reason banks invest. Pension obligations are typically managed through dedicated pension funds or similar financial arrangements, which may include a portfolio of investments designed to meet these long-term liabilities. The primary purpose of a bank's investment activities is to generate income to pay interest to depositors and ensure liquidity and profitability, rather than directly funding pension benefits.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (e): Describe aspects of the asset management industry.

Q.2826 Wrap n Roll is a food chain based in Nevada. The company is respected in its industry for the treatment of its employees. Wrap n Roll has decided to invest in a pension plan where employee payouts are computed using a formula that considers factors such as length of employment and salary history. Considering Wrap n Roll's requirement, which of the following is the *most* appropriate pension plan?

- A. Defined benefit plans.
- B. Defined contribution plan.
- C. Fixed asset pension plan.

The correct answer is **A**.

A defined benefit pension plan promises to pay certain benefits to its employees. In defined benefit plans, the employer assumes the investment risk of the plan. In a defined contribution plan, only contributions to the account are guaranteed, not the future benefits. It is a retirement plan in the employee's name usually funded by both the employee and the employer. With DC plans, individuals will invest part of their wages while working, expecting to draw on the accumulated funds to provide income during retirement. The employee accepts the investment and inflation risk and is responsible for ensuring that there are enough assets in the plan to meet their needs upon retirement.

B is incorrect. Defined contribution plans are retirement savings plans where the benefit is determined by the contributions made to the plan and the investment performance of those contributions. Unlike defined benefit plans, defined contribution plans do not guarantee a specific amount of benefit at retirement. Instead, employees bear the investment risk, and the retirement benefit depends on the amount of contributions made and the performance of the investments chosen. This does not align with Wrap n Roll's requirement for a pension plan that calculates payouts based on length of employment and salary history.

C is incorrect. Fixed asset pension plans are not a commonly recognized category within pension plans. The term might be confused with fixed benefit or defined benefit plans, but as it stands, it does not represent a standard option in pension planning. Therefore, it cannot be considered the most appropriate pension plan for Wrap n Roll's specific requirements. Defined benefit plans, which offer predetermined benefits based on salary history and length of service, are a more fitting choice for the company's objectives.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (d): Describe defined contribution and defined benefit pension plans.

Q.2827 Which of the following statements regarding the Portfolio Management Process are accurate?

- I. The planning step begins with the formation of an Investment Policy Statement (IPS).
 - II. The execution step includes a top-down analysis of assets.
 - III. The feedback step deals with the bottom-up analysis.
- A. Statements I & II only.
 - B. Statements I & III only.
 - C. Statements I, II & III.

The correct answer is **A**.

The Portfolio Management Process has three steps:

- I. The planning step begins with the formation of an Investment Policy Statement.
- II. The execution step deals with asset allocation using a top-down or bottom-up analysis.
- III. The feedback step involves monitoring and rebalancing the portfolio.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (b): Describe the steps in the portfolio management process.

Q.2829 Which of the following mutual funds gives an investor the option to invest additional funds without additional fees?

- A. Open-end no-load fund.
- B. Open-end front-load fund.
- C. Closed-end front-load fund.

The correct answer is **A**.

Open-end funds allow investors to invest additional funds in the mutual fund. No-load funds do not charge additional fees on the purchase of additional fund shares or redemption of shares.

B is incorrect. Load funds are funds in which in addition to the annual fee, a percentage fee is charged to invest in the fund and/or for redemptions from the fund.

C is incorrect. Closed-end funds do not allow new investments into the fund.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (f): Describe mutual funds and compare them with other pooled investment products.

Q.2832 Escobar Slim recently inherited \$40 million from his father's coal mine business. Slim does not have a sound knowledge of the stock market, but he wants to invest in a passively managed mutual fund that provides as much return as the Nasdaq Composite. Which of the following is the most appropriate mutual fund for Escobar Slim?

- A. Index fund.
- B. Stock mutual fund.
- C. Money market fund.

The correct answer is **A**.

Index funds are passively managed mutual funds that replicate a specific index like the Nasdaq Composite.

Stock Mutual Funds will include selective stocks from a specific index and can underperform or outperform the index. Money Market Funds invests in short-term debt securities and are actively managed.

B is incorrect. Stock mutual funds, while they invest in stocks similar to those found in indices like the Nasdaq Composite, do not aim to replicate the performance of an index. Instead, they are actively or passively managed to achieve returns that can either outperform or underperform the target index. The selection of stocks is based on the fund manager's research and strategy, which may not align with Slim's desire for an investment that provides returns similar to the Nasdaq Composite.

C is incorrect. Money market funds invest in short-term debt securities such as treasury bills, commercial paper, and certificates of deposit. They are designed to offer investors high liquidity with a very low level of risk. While money market funds are known for their stability and preservation of capital, they do not aim to replicate the performance of stock indices like the Nasdaq Composite and typically offer lower returns compared to stock or index funds. Therefore, a money market fund would not meet Slim's objective of investing in a fund that provides returns similar to the Nasdaq Composite.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (f): Describe mutual funds and compare them with other pooled investment products.

Q.2833 Which of the following is/are the *most likely* correct statements regarding similarities and differences between exchange-traded funds and closed-end funds?

- I. Both types of funds are passively managed to match a particular index.
- II. In both types of funds, the market price of shares and the net asset value (NAV) can differ significantly.
- III. Both types of funds can be sold and purchased on the open market.
 - A. III only.
 - B. I & III only.
 - C. I & II only.

The correct answer is **A**.

ETFs and closed-end funds are sold and purchased on the open market rather than from the fund itself. Options I & II are incorrect. ETFs are passively managed to match the index, while closed-end funds are actively managed. In closed-end funds, the market price of shares and the NAV differ significantly, whereas ETFs are designed to keep their share price close to the NAVs.

B is incorrect. It suggests that both ETFs and CEFs are passively managed to match a particular index. While many ETFs are indeed passively managed with the goal of replicating the performance of a specific index, CEFs are typically actively managed. Active management in CEFs involves a fund manager making investment decisions with the aim of outperforming a benchmark index, rather than merely matching it. This fundamental difference in management style is crucial for understanding the distinct characteristics and investment strategies associated with each type of fund.

C is incorrect. It indicates that the market price of shares and the net asset value (NAV) can differ significantly in both ETFs and CEFs. While it is true that CEFs often exhibit significant discrepancies between their market price and NAV due to the fixed number of shares and market demand dynamics, ETFs are structured to minimize such discrepancies. ETFs employ a mechanism involving authorized participants who can create or redeem shares in large blocks, known as creation units. This process helps to ensure that the ETF's market price stays closely aligned with its NAV. Therefore, the statement that both types of funds typically experience significant differences between market price and NAV does not accurately apply to ETFs.

CFA Level I, Portfolio Management, Learning Module 3: Portfolio Management: An Overview. LOS (e): Describe aspects of the asset management industry.

Learning Module 4: Basics of Portfolio Planning & Construction

Q.138 What should an Investment Policy Statement *most likely* contain?

- A. It should describe the context, the investor and the structure of the investment.
- B. It should describe the overall investment objective.
- C. It should state the stocks and derivatives the investor will purchase.

The correct answer is **B**.

The Investment Policy Statement provides the general investment goals and objectives, not specifically the stocks and derivatives the investor will purchase.

A is incorrect. While it is true that an Investment Policy Statement should provide some context about the investor and possibly the structure of the investment, this choice does not capture the essence of what an IPS primarily aims to achieve. The main purpose of an IPS is not to describe the investor or the investment structure in detail but to establish clear and measurable investment objectives and guidelines. This includes defining the risk tolerance, investment horizon, asset allocation, and criteria for selecting and monitoring investments. While context and structure are important, they are secondary to the core objective of outlining the investment strategy and goals.

C is incorrect. Stating the specific stocks and derivatives the investor will purchase is too prescriptive for an Investment Policy Statement. An IPS is meant to provide a high-level strategy and set of guidelines rather than dictate specific investment choices. The investment landscape is dynamic, and specific investment opportunities may change over time. Therefore, an IPS focuses on setting the criteria for investment selection and the overall strategic approach rather than listing specific securities. This allows for flexibility in the investment process and ensures that the investment strategy can adapt to changing market conditions while still adhering to the investor's long-term objectives and risk tolerance.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (b): Describe the major components of an IPS.

Q.139 Which of these is *not* one of the two major components of an Investment Policy Statement?

- A. Statement of the responsibilities of the investment manager and the client
- B. Performance evaluation benchmark
- C. The investment manager's compensation

The correct answer is **C**.

The two major components of an Investment Policy statement are the investment manager's statement of the responsibilities and the performance evaluation benchmark.

A is incorrect. The statement of the responsibilities of the investment manager and the client is indeed one of the two major components of an Investment Policy Statement. This section of the IPS is crucial as it clearly delineates the roles and responsibilities of each party involved in the investment process. It ensures that both the investment manager and the client have a mutual understanding of their respective duties, which can include investment decision-making, reporting requirements, and other critical tasks necessary for the effective management of the portfolio. By establishing these responsibilities upfront, the IPS helps prevent misunderstandings and sets the foundation for a transparent and accountable investment management relationship.

B is incorrect. The performance evaluation benchmark is the second major component of an Investment Policy Statement. This benchmark is essential for measuring the performance of the investment portfolio against a relevant and agreed-upon standard. It provides a clear and objective way to assess how well the investment strategy is performing in relation to the market or to specific investment goals. The inclusion of a performance evaluation benchmark in the IPS is vital for ensuring that the investment manager's performance can be quantitatively evaluated over time. This allows for adjustments to be made if the portfolio is not meeting its objectives, thereby ensuring that the client's investment goals are being actively pursued.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (b): Describe the major components of an IPS.

Q.140 Which of the following statements is *most likely* accurate?

- A. High levels of uncertainty are associated with low potential returns.
- B. Risk and return should be considered on a mutually exclusive basis.
- C. Return objectives should be considered in conjunction with risk preferences.

The correct answer is **C**.

Risk and return are mutually inclusive.

NOTE: For option A), high levels of uncertainty = high levels of risk, so high potential returns.

A is incorrect. This statement contradicts the fundamental finance principle of the risk-return tradeoff, which posits that higher risk (or uncertainty) is generally associated with the potential for higher returns. The rationale behind this is that investors need to be compensated for taking on additional risk, and this compensation comes in the form of higher expected returns. Therefore, high levels of uncertainty or risk are more likely to be associated with high potential returns, not low ones.

B is incorrect. This perspective is fundamentally flawed in the context of financial decision-making. Risk and return are intrinsically linked and cannot be separated when evaluating investment opportunities. The relationship between risk and return is a core concept in finance, indicating that the expected return on an investment is directly related to the level of risk associated with it.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (c): Describe risk and return objectives and how they may be developed for a client.

Q.767 Which of the following is *least likely* a characteristic of hedge funds?

- A. Hedge funds usually have restricted liquidity.
- B. Hedge funds are readily available to all investors.
- C. Management fees are not only a fixed percentage of the funds under management, but managers also collect fees based on performance.

The correct answer is **B**.

Hedge funds are not readily available to all investors. They typically require a high minimum investment and often have restricted liquidity by allowing only periodic (e.g., quarterly) withdrawals or having a long fixed-term commitment. In addition, hedge funds typically charge two distinct fees: a traditional asset-based management fee (AUM fee) and an incentive (or performance) fee in which the hedge fund earns a portion of the fund's realized capital gains.

A is incorrect. Hedge funds usually have restricted liquidity, which is a characteristic feature of these investment vehicles. Unlike mutual funds or exchange-traded funds (ETFs), hedge funds often impose lock-up periods during which investors cannot withdraw their capital. These lock-up periods can range from a few months to several years, depending on the specific hedge fund's strategy and structure. Additionally, even after the lock-up period, withdrawals may only be permitted at certain intervals, such as quarterly or semi-annually. This restricted liquidity is a measure to ensure that the fund managers have a stable capital base to execute long-term or illiquid investment strategies without the need to prematurely liquidate positions to meet redemption requests.

C is incorrect. It is indeed a characteristic of hedge funds to charge both a management fee and a performance fee. The management fee is typically a fixed percentage of the assets under management (AUM), usually ranging from 1% to 2% annually. The performance fee, on the other hand, is a feature that aligns the interests of the hedge fund managers with those of the investors. This fee is a percentage of the fund's profits, often around 20%, and is only charged if the fund achieves a certain level of performance. This fee structure incentivizes managers to seek the highest possible returns for their investors, as their compensation is directly tied to the fund's success. This dual fee structure is a hallmark of hedge funds and distinguishes them from other types of investment funds, which may only charge a management fee.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (e): Describe the investment constraints of liquidity, time horizon, tax concerns, legal and regulatory factors, and unique circumstances and their implications for the choice of portfolio assets.

Q.793 With respect to the Investment Policy Statement (IPS), which of the following statements is *least likely* accurate?

- A. The IPS is a one-time exercise undertaken at the beginning of the portfolio construction.
- B. The IPS typically includes the client's investment objectives and the constraints that apply to the client's portfolio.
- C. Maintaining an IPS or any other similar document for the clients may be required by the laws and regulations of a particular country.

The correct answer is **A**.

Although the IPS is the starting point of the portfolio management process, it should be reviewed regularly to ensure its consistency with the client's circumstances and requirements.

B is incorrect. This option inaccurately implies that the IPS might not always include the client's investment objectives and constraints. In reality, the inclusion of investment objectives and constraints is a fundamental aspect of the IPS. These elements are critical for defining the scope of the investment strategy, setting performance expectations, and establishing boundaries within which the portfolio should be managed. The IPS is specifically designed to articulate these aspects clearly and concisely, providing a structured framework for investment decision-making and portfolio management.

C is incorrect. This statement suggests that maintaining an IPS or a similar document might not be a regulatory requirement in some jurisdictions. While it is true that the specific requirements regarding the IPS can vary by country, the practice of maintaining a comprehensive document that outlines the investment strategy, objectives, and constraints is widely recognized as a best practice in the investment management industry. Regulatory bodies in many countries either require or strongly recommend the use of an IPS to ensure that investment advisors act in the best interests of their clients, maintain transparency, and adhere to a disciplined investment process. Therefore, the statement underestimates the importance and prevalence of the IPS in guiding investment practices and ensuring compliance with regulatory standards.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (b): Describe the major components of an IPS.

Q.794 Which of the following sections of an Investment Policy Statement (IPS) provides relevant information on specific types of assets that have been excluded from the portfolio?

- A. Investment guidelines
- B. Investment objectives
- C. Investment constraints

The correct answer is **A**.

The investment guidelines section of an IPS provides information about how the policy should be executed and on specific types of assets excluded from the investment, if any.

B is incorrect. The investment objectives section of an IPS outlines the financial goals and return expectations of the client. While it provides a broad overview of what the investment strategy aims to achieve, it does not typically detail specific exclusions or restrictions on asset classes. The focus here is more on the desired outcomes, such as capital preservation, income generation, or growth, rather than on the means of achieving these outcomes through specific investment choices.

C is incorrect. Investment constraints detail the various limitations and considerations that must be taken into account when managing the portfolio. These can include liquidity needs, time horizon, tax considerations, legal requirements, and unique circumstances. While investment constraints can influence which assets may be deemed suitable or unsuitable for the portfolio, they do not directly specify excluded assets. Instead, they provide a framework for making investment decisions that accommodate the client's specific situation and requirements.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (e): Describe the investment constraints of liquidity, time horizon, tax concerns, legal and regulatory factors, and unique circumstances and their implications for the choice of portfolio assets.

Q.797 With respect to return objectives, which of the following is the *least likely* accurate?

- A. Return objective should be consistent with risk objective and also with the current economic and market environment.
- B. For taxable investors, only after-tax bases should be used for analyzing return.
- C. Return objectives should be stated only on an absolute basis.

The correct answer is C.

Return objectives may be stated on an absolute or a relative basis. An example of an absolute objective is achieving a particular rate of return. For a relative objective, it may be stated as relative to a benchmark return such as the S&P 500.

A is incorrect. This alignment ensures that the investment strategy is realistic and tailored to the investor's risk tolerance, financial situation, and goals. It also acknowledges that return expectations should be adaptable to changing market conditions, which is crucial for maintaining a relevant and effective investment approach.

B is incorrect. For taxable investors, analyzing returns on an after-tax basis is indeed crucial. Taxes can significantly impact the net return an investor receives, and different investment vehicles and strategies can have varying tax implications. By considering the after-tax return, investors can make more informed decisions that align with their financial goals and tax situation. This approach ensures that return objectives are realistic and achievable, taking into account the tax consequences of investment decisions.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS(c): Describe risk and return objectives and how they may be developed for a client.

Q.799 Illiquid and risky investments are more suitable for an investor with which of the following requirements?

- A. The investor's huge tax liability payment is due for in six months.
- B. The investor's main purpose of investment is to plan for retirement.
- C. The investor has to incur expenses for his children's education in a short span of time.

The correct answer is **B**.

The investment objective of retirement suggests a greater time horizon as compared to the other two options. Illiquid and risky investments may not be suitable for an investor with a short time horizon because the investor may not have enough time to recover from losses.

A is incorrect. The investor may need to access funds quickly to meet the tax payment obligation. The short time frame does not provide enough time to recover from potential losses that might occur with such investments, and the illiquidity could prevent the investor from selling the investment at a fair price in a timely manner.

C is incorrect. The priority is preserving capital to ensure that the funds are available when needed for educational expenses. The risk of loss and the difficulty in quickly converting these investments into cash could jeopardize the investor's ability to meet the upcoming financial obligations for their children's education.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS(e): Describe the investment constraints of liquidity, time horizon, tax concerns, legal and regulatory factors, and unique circumstances and their implications for the choice of portfolio assets.

Q.800 Which of the following constitutes a legal or regulatory constraint and should be noted down in the Investment Policy Statement (IPS) of an investor?

- A. The investor has personal objections to certain companies due to the environmental impact of business activities of those companies.
- B. The investor is the director of the company and has access to material non-public information.
- C. The investor has a huge liability to outside parties and there are chances that he might be declared insolvent in a short time.

The correct answer is **B**.

When an individual has access to material non-public information about a particular security, this situation forms a legal constraint depending upon the laws of the specific country.

A is incorrect. Personal objections to investing in certain companies due to their environmental impact, while important for ethical or socially responsible investing, do not constitute a legal or regulatory constraint. These preferences are part of the investor's ethical or moral values and should be noted in the IPS under ethical or social constraints rather than legal or regulatory constraints. While these considerations are crucial for aligning the investment strategy with the investor's values, they do not carry the same legal implications as insider trading laws.

C is incorrect. The potential for an investor to be declared insolvent due to huge liabilities to outside parties is a financial constraint and should be noted in the IPS as such. This situation impacts the investor's risk tolerance and liquidity needs but does not directly relate to legal or regulatory constraints on investment activities. Financial constraints are critical for developing an investment strategy that addresses the investor's financial situation and goals, but they do not have the same legal implications as having access to material non-public information.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (e): Describe the investment constraints of liquidity, time horizon, tax concerns, legal and regulatory factors, and unique circumstances and their implications for the choice of portfolio assets.

Q.801 Which of the following is CORRECT in terms of the principles of strategic asset allocation while constructing a portfolio?

- A. The portfolio's total risk accounts for most of its change in value over the long-term.
- B. The portfolio's systematic risk accounts for most of its change in value over the long-term.
- C. The portfolio's non-systematic risk accounts for most of its change in value over the long-term.

The correct answer is **B**.

One of the principles of the strategic asset allocation is that a portfolio's systematic risk accounts for most of its change in value over the long-term, which is related to the economic system and this risk cannot be eliminated even by holding a diversified portfolio.

A is incorrect. This option suggests that the portfolio's total risk, which includes both systematic and non-systematic risk, accounts for most of its change in value over the long term. While total risk does impact a portfolio's performance, strategic asset allocation primarily focuses on managing systematic risk. Non-systematic risk, or specific risk, relates to factors that can affect individual securities or specific sectors and can be mitigated through diversification. Therefore, stating that total risk accounts for most of the portfolio's change in value overlooks the importance of distinguishing between systematic and non-systematic risk in strategic asset allocation.

C is incorrect. The effects of specific risks tend to cancel out across different investments. Therefore, suggesting that non-systematic risk accounts for most of the portfolio's change in value over the long term does not align with the principles of strategic asset allocation.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.802 Apart from the exposures to systematic risk factors specified in the strategic asset allocation, the returns of an investment strategy depend on which of the following other sources?

- A. Tactical asset allocation
- B. Security selection
- C. Both A) and B)

The correct answer is C.

Both the tactical asset allocation and the selection of security play an important role in determining the return of an investment strategy.

A is incorrect. Tactical asset allocation alone is not the sole determinant of an investment strategy's returns. While it plays a significant role in adjusting the asset mix in response to short-term market conditions, it does not account for the impact of selecting individual securities within those asset classes. Tactical asset allocation focuses on the broader allocation decisions rather than the specific investment choices within each asset class.

B is incorrect. Similarly, security selection on its own does not encompass all the factors that influence the returns of an investment strategy. While selecting high-performing securities is crucial, it does not capture the strategic adjustments made to the overall asset allocation in response to changing market conditions. Security selection is focused on identifying opportunities within specific asset classes, but it does not address the allocation between different asset classes that can also significantly impact overall investment performance.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.803 Which of the following BEST describes the rebalancing policy?

- A. An attempt to generate a higher return than the asset class benchmark
- B. The set of rules to guide the process of restoring the portfolio's original exposures to systematic risk factors
- C. The decision to deliberately deviate from the policy portfolio

The correct answer is **B**.

When a certain threshold deviation from the policy weights breaches, the portfolio needs to be rebalanced back to the policy weights and the set of rules to guide this is known as the rebalancing policy.

A is incorrect. Attempting to generate a higher return than the asset class benchmark is not the primary goal of a rebalancing policy. While rebalancing can potentially lead to improved performance by capitalizing on the mean-reversion tendencies of asset prices, its main purpose is risk management through maintaining the portfolio's intended asset allocation. This option confuses rebalancing with active management strategies aimed at outperforming benchmarks.

C is incorrect. The decision to deliberately deviate from the policy portfolio is more closely related to tactical asset allocation or active management strategies, where an investor or manager makes intentional adjustments to the portfolio's asset mix in an attempt to take advantage of short-term market opportunities or to avoid market downturns. Rebalancing policy, on the other hand, is a systematic approach aimed at maintaining the portfolio's original strategic asset allocation, rather than seeking to deviate from it for potential short-term gains.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.1185 Nisha Mazhar is a risk analyst, and she has been given the task to identify the factor that helps measure her organization's risk tolerance. Which of the following factors will help Mazhar complete her task?

- A. Market demand
- B. Financial strength
- C. Interest rates

The correct answer is **B**.

Factors that determine the risk tolerance of an organization include: financial strength, ability to bear losses, regulatory environment, ability to respond to negative events and expertise in the current line of business.

A is incorrect. Market demand, while important for strategic planning and operational adjustments, does not directly measure an organization's risk tolerance. Market demand can influence revenue projections and affect the company's competitive position, but it does not provide insight into the organization's capacity to absorb losses or withstand financial stress. Risk tolerance is more closely related to the internal financial and operational capabilities of the organization rather than external market conditions.

C is incorrect. Interest rates are a factor that can influence the cost of borrowing and the return on investments, thereby affecting an organization's financial performance. However, interest rates alone do not measure an organization's risk tolerance. While changes in interest rates can impact the economic environment in which a company operates, risk tolerance is determined by the company's internal financial strength and ability to manage and absorb risks. Interest rates are just one of many external factors that a risk analyst would consider in the broader context of risk management and financial planning.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (c): Describe risk and return objectives and how they may be developed for a client.

Q.1280 Which of the following is the appropriate reason for writing an Investment Policy Statement (IPS)?

- A. It provides the investor's return goals and risk tolerance.
- B. It provides details regarding the investment style of the manager.
- C. It provides details of policies regarding fund management.

The correct answer is **A**.

An IPS provides details regarding the investor's goal in terms of risk and return.

B is incorrect. While it might seem that detailing the investment style of the manager is a primary reason for an IPS, this is not its core purpose. The investment style of the manager is indeed an important aspect of the investment process, but it is secondary to defining the investor's return goals and risk tolerance. The IPS primarily focuses on the investor's objectives and constraints, and while it may reference the investment style or strategy to be employed, this is done within the context of achieving the investor's specified goals.

C is incorrect. Providing details of policies regarding fund management is another aspect that might be included in an IPS, but it is not the primary reason for its creation. Policies regarding fund management, such as rebalancing procedures, selection criteria for investments, and monitoring and reporting requirements, support the main objective of aligning the investment strategy with the investor's goals and risk tolerance. However, the essence of the IPS is to document the investor's financial objectives and how these will be achieved, making the detailing of fund management policies a supportive rather than a primary function.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (c): Describe risk and return objectives and how they may be developed for a client.

Q.1281 Which of the following is *least likely* a component of an Investment Policy Statement?

- A. The description of the client
- B. Investment constraints
- C. The manager's investment style

The correct answer is **C**.

The manager's portfolio management style is not mentioned in an IPS.

A is incorrect. The description of the client is a fundamental component of an Investment Policy Statement. This section provides a comprehensive overview of the client's financial situation, including their goals, risk tolerance, and investment horizon. It sets the foundation for the investment strategy and helps ensure that the portfolio is aligned with the client's objectives and needs. Including detailed client information in the IPS ensures that the investment strategy remains client-focused and tailored to their specific circumstances.

B is incorrect. Investment constraints are another crucial element of an Investment Policy Statement. These constraints can include liquidity needs, time horizon, tax considerations, legal restrictions, and unique preferences or circumstances of the client. By clearly defining these constraints in the IPS, the investment manager can develop and implement a strategy that respects these limitations while striving to achieve the client's financial goals. Recognizing and addressing these constraints is essential for creating a realistic and effective investment plan.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (b): Describe the major components of an IPS.

Q.1283 John Keller mentioned in his Investment Policy Statement that his portfolio's return should not go below 10% at the end of every year. Which of the following types of risk objectives does Keller have?

- A. Absolute risk objective
- B. Relative risk objective
- C. Risk-minimizing objective

The correct answer is **A**.

An absolute risk objective provides risk objectives in absolute terms.

B is incorrect. This option suggests that Keller has a relative risk objective, which is not the case. A relative risk objective involves setting the portfolio's performance goals in relation to a benchmark or index. For example, aiming to outperform the S&P 500 by 2% annually. Keller's objective does not mention any comparison to market indices or benchmarks; instead, it sets a specific minimum return, which aligns with the definition of an absolute risk objective.

C is incorrect. The risk-minimizing objective is focused on reducing the risk to the lowest possible level, often without specifying a particular return threshold. While minimizing risk might be a concern for many investors, Keller's objective explicitly states a minimum return goal rather than focusing solely on minimizing risk. Therefore, this option does not accurately describe Keller's risk objective, which is clearly defined in terms of achieving a minimum return rather than minimizing risk exposure.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (c): Describe risk and return objectives and how they may be developed for a client.

Q.1284 An investor has just lost his job and has mortgages payments to make. He believes that investing in technology stocks can earn him sufficient returns to pay for them. Assuming these circumstances, evaluate his risk tolerance.

- A. The investor has a high ability to take risk but no willingness to take risk.
- B. The investor has a high willingness to take risk but low ability to take risk.
- C. The investor has a high risk tolerance and a high ability to take risk.

The correct answer is **B**.

The ability to take risk depends on the financial circumstances and the willingness to take risk depends on the investor's attitude. In this case, the investor has a high willingness to take risk but low ability to take risk.

A is incorrect. This option suggests that the investor has a high ability to take risk but no willingness to take risk, which contradicts the scenario described. The investor's consideration of investing in technology stocks to generate income for mortgage payments clearly indicates a willingness to engage in riskier investments. However, the recent job loss significantly impacts the investor's financial stability, thereby reducing their ability to take on risk, not their willingness.

C is incorrect. While the investor demonstrates a high willingness to take on risk by considering investments in technology stocks, their ability to take risk is compromised by their current financial situation, including the loss of a job and the need to make mortgage payments. High risk tolerance and ability to take risk would imply both financial stability and a psychological readiness to engage in risky investments, which does not align with the investor's circumstances.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (d): Distinguish between the willingness and the ability (capacity) to take risk in analyzing an investor's financial risk tolerance.

Q.1285 Which of the following is a relative risk objective?

- A. Returns should not go below 18% in 6-months.
- B. The total loss on the portfolio should not be more than \$8 million in 6-months.
- C. The returns should not be below 10% of the returns on the S&P 500 index.

The correct answer is **C**.

Relative risk objectives provide a relative measure of risk relative to the S&P 500, the LIBOR, etc.

A is incorrect. This option suggests a specific return target (returns should not go below 18% in 6 months), which is an example of an absolute risk objective rather than a relative one. Absolute risk objectives focus on achieving specific return thresholds or limiting losses to a certain amount, without reference to the performance of a benchmark or index. They are concerned with the actual outcomes of the investment, irrespective of how the broader market or a specific benchmark performs.

B is incorrect. This option, which states that the total loss on the portfolio should not be more than \$8 million in 6 months, also represents an absolute risk objective. Similar to option A, it sets a specific threshold for losses, focusing on limiting the absolute amount of potential loss within a given timeframe. This type of objective does not take into account the performance of any external benchmark or index, but rather aims to control the direct financial risk to the investment or portfolio.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (c): Describe risk and return objectives and how they may be developed for a client.

Q.1288 Which of the following is *least likely* an investment constraint for an investor?

- A. Tax situation
- B. Legal and regulatory constraints
- C. Management fees

The correct answer is **C**.

Management fees, while an important consideration in the selection of investment vehicles and strategies, are least likely to be considered an investment constraint in the traditional sense. Investment constraints typically include factors that directly limit or guide the investment decision-making process, such as liquidity needs, tax considerations, time horizon, legal and regulatory requirements, and unique circumstances specific to the investor. These constraints are fundamental in developing an investment policy statement and guiding the strategic asset allocation process.

A is incorrect. The tax situation of an investor is a critical investment constraint. Taxes can significantly affect the net return on investments, and different investment vehicles and strategies can have vastly different tax implications. For example, interest income may be taxed at a different rate than dividend income or capital gains. Tax-exempt investors, such as certain pension funds or charitable organizations, may have different investment considerations than taxable entities or individuals. Therefore, understanding and considering an investor's tax situation is essential in the investment decision-making process.

B is incorrect. Legal and regulatory constraints are fundamental investment constraints that must be considered in the investment decision-making process. These constraints can vary widely among investors depending on their jurisdiction, the legal structure of their investment accounts, and their status as retail or institutional investors. For example, pension funds and insurance companies are subject to specific regulatory requirements that can influence their investment choices. Similarly, individual investors may face legal restrictions related to accredited investor status or investment in certain types of securities. Ignoring legal and regulatory constraints can result in significant legal and financial consequences, making it a crucial consideration for all investors.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (e): Describe the investment constraints of liquidity, time horizon, tax concerns, legal and regulatory factors, and unique circumstances and their implications for the choice of portfolio assets.

Q.1289 An investor directs his portfolio manager not to invest in shares of DC Oil Transporting Company which has been accused of releasing chemical waste into the ocean. Which type of investment constraint is it?

- A. Legal and regulatory
- B. Unique circumstance
- C. Anti-dumping tax

The correct answer is **B**.

The investor's directive to the portfolio manager not to invest in shares of DC Oil Transporting Company, which has been accused of releasing chemical waste into the ocean, is an example of a unique circumstance constraint. Unique circumstances constraints are those that reflect the specific ethical, moral, or personal preferences of an investor. These constraints are tailored to the individual investor's values or beliefs and can include a wide range of considerations, such as environmental, social, and governance (ESG) criteria, religious beliefs, or ethical stances against certain business practices. In this case, the investor's decision to exclude DC Oil Transporting Company from their portfolio due to environmental concerns falls squarely within the realm of unique circumstances, as it reflects a personal ethical stance against investing in companies with poor environmental practices.

A is incorrect. Legal and regulatory constraints refer to the limitations placed on investment choices by laws, regulations, or legal agreements. These constraints can include restrictions on certain types of investments due to regulatory requirements, legal considerations related to the investor's status (such as accredited investor status), or compliance with laws such as those against money laundering.

C is incorrect. An anti-dumping tax is a tariff imposed by a government on foreign imports that it believes are priced below fair market value, often to protect domestic industries from unfair competition. This type of constraint is related to governmental trade policies and has no direct relevance to an individual investor's personal investment choices or ethical considerations.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (e): Describe the investment constraints of liquidity, time horizon, tax concerns, legal and regulatory factors, and unique circumstances and their implications for the choice of portfolio assets.

Q.1290 Which of the following specifies the percentage of each asset included in each asset class?

- A. Investment Policy Statement (IPS)
- B. Investment constraints
- C. Strategic asset allocation

The correct answer is **C**.

The strategic asset allocation specifies the percentage of each asset included in each asset class. **A is incorrect.** The Investment Policy Statement (IPS) is a document that outlines an investor's investment goals and strategies, including risk tolerance, investment objectives, and constraints. While it serves as a strategic guide for making investment decisions and may include guidelines for asset allocation, it does not specify the exact percentage of each asset included in each asset class. The IPS provides a framework for the investment process but leaves the specifics of asset allocation to be determined by the strategic asset allocation process.

B is incorrect. Investment constraints are limitations or restrictions on the investment process that reflect an investor's specific financial situation, risk tolerance, liquidity needs, time horizon, legal requirements, and tax considerations. These constraints are critical in shaping the investment strategy and asset allocation; however, they do not directly specify the percentage of each asset included in each asset class. Instead, they influence how the strategic asset allocation is designed to meet the investor's goals within the defined constraints.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.1292 Which of the following is appropriate for a manager who deviates from strategic asset allocation weights to take advantage of short-term opportunities?

- A. Strategic asset allocation
- B. Tactical asset allocation
- C. Opportunistic selection

The correct answer is **B**.

In tactical asset allocation, the manager deviates from strategic asset allocation weights to take advantage of short-term opportunities.

A is incorrect. Strategic asset allocation refers to the long-term investment strategy that establishes a fixed asset mix target. This target is based on an investor's goals, risk tolerance, and investment horizon. Strategic asset allocation does not involve frequent adjustments in response to market conditions or short-term opportunities. Instead, it focuses on maintaining a predetermined balance of asset classes over time, making it unsuitable for exploiting short-term market opportunities.

C is incorrect. Opportunistic selection might seem like a suitable strategy for taking advantage of short-term opportunities; however, it lacks the structured approach of tactical asset allocation. Opportunistic selection can be more speculative and may not necessarily involve a disciplined strategy of adjusting the asset mix in response to specific market conditions or economic forecasts. While opportunistic selection can be part of a broader investment strategy, tactical asset allocation provides a more systematic and defined framework for temporarily deviating from strategic asset allocation weights with the aim of enhancing portfolio performance or managing risk in the short term.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.1293 During the strategic asset allocation, which of the following leads to greater diversification benefits?

- A. Low correlation within the asset classes
- B. Low correlation between asset classes
- C. High correlation between the asset classes

The correct answer is **B**.

A low correlation between asset classes leads to greater diversification benefits.

A is incorrect. While low correlation within asset classes can contribute to diversification, it does not offer the same level of diversification benefits as low correlation between different asset classes. Within an asset class, investments tend to be more closely related in terms of their risk and return characteristics. For instance, different stocks within the technology sector may have low correlation with each other, but they are still subject to the same sector-specific risks. Therefore, diversification within an asset class, although beneficial, is limited in its ability to reduce risk compared to diversification across different asset classes.

C is incorrect. High correlation between asset classes is detrimental to diversification benefits. When asset classes move in the same direction at the same time, the risk of the portfolio tends to be higher, and the potential for mitigating losses through diversification is reduced. In extreme cases, if all asset classes in a portfolio are highly correlated and experience a downturn simultaneously, the portfolio could suffer significant losses. Therefore, high correlation between asset classes is the opposite of what is sought for effective diversification in strategic asset allocation.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.1294 Which of the following strategies refers to the attempt to generate higher returns than the asset class benchmark by selecting securities with a higher expected return?

- A. Security selection.
- B. Tactical asset allocation.
- C. Strategic asset allocation.

The correct answer is **A**.

Security selection involves choosing individual securities within an asset class that are expected to outperform the asset class benchmark. This process deviates from the index weights assigned to individual securities and aims to add value through superior security selection. In contrast, strategic asset allocation is the long-term allocation of assets based on the investor's risk tolerance, investment objectives, and time horizon, while tactical asset allocation is the short-term adjustment of asset class weights based on near-term market forecasts.

B is incorrect. Tactical asset allocation is incorrect because it involves short-term adjustments to the asset class weights in a portfolio based on near-term market forecasts. It is a deliberate deviation from the strategic asset allocation (SAA) with the intent to capitalize on perceived short-term market opportunities. While tactical asset allocation can impact overall returns, it is not focused on selecting individual securities with higher expected returns, but rather on adjusting the overall asset class exposures in the portfolio.

C is incorrect. Strategic asset allocation is incorrect because it refers to the long-term allocation of assets in a portfolio based on the investor's risk tolerance, investment objectives, and time horizon. It establishes the policy weights for different asset classes and is not concerned with the selection of individual securities. The goal of strategic asset allocation is to create a balanced portfolio that can achieve the desired risk-return profile over the long term, rather than actively seeking higher returns through individual security selection.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.1296 Which of the following strategies allocates the majority portion to passively managed indices and a small portion to actively managed indices?

- A. Passive portfolio management
- B. Strategic asset allocation
- C. Core-satellite approach

The correct answer is **C**.

The core-satellite approach allocates the majority portion of an investment to passively managed indices and a small portion to actively managed indices.

A is incorrect. Passive portfolio management refers to a strategy that aims to replicate the performance of a market index or benchmark. It involves buying a portfolio of securities that mirror the constituents of the index, with minimal buying and selling of assets. This strategy does not involve a deliberate allocation to actively managed indices, which is a key component of the core-satellite approach. Passive management focuses on long-term investment in the market as a whole, with the belief that it is difficult or impossible to consistently outperform the market through active management.

B is incorrect. Strategic asset allocation is a portfolio strategy whereby the investor sets target allocations for various asset classes and periodically rebalances the portfolio back to these targets. This rebalancing can be done to maintain a desired level of asset allocation or risk. While strategic asset allocation may involve both actively and passively managed investments, it does not specifically prescribe a majority allocation to passively managed indices with a smaller portion allocated to actively managed indices. Instead, it focuses on achieving a balanced investment portfolio that aligns with the investor's risk tolerance, investment goals, and time horizon, without a specific emphasis on the core-satellite approach's distinct structure.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.1297 Which type of portfolio manager allocates the larger portion of investments to exchange-traded funds?

- A. Passive managers
- B. Active managers
- C. Hedge fund managers

The correct answer is **A**.

A passive manager holds just the market portfolio. Passive managers allocate all of their investments to track indices. Exchange-traded funds track indices.

B is incorrect. Active managers typically focus on selecting individual stocks or securities with the aim of outperforming a benchmark index. This approach involves frequent buying and selling of assets to capitalize on market opportunities, which contrasts with the passive strategy of holding a diversified portfolio that tracks an index. While active managers may include ETFs in their portfolios, they generally allocate a smaller portion to these instruments compared to passive managers. Active management relies on the skill, research, and decisions of the manager to achieve excess returns, which often leads to higher transaction costs and management fees.

C is incorrect. Hedge fund managers employ a wide range of investment strategies, including but not limited to, long-short equity, market neutral, arbitrage, and global macro strategies. While some hedge funds might use ETFs as part of their investment strategy, their primary focus is often on achieving absolute returns through active management and the use of complex instruments, including derivatives, leverage, and short selling. The allocation to ETFs by hedge fund managers is typically strategic and specific to certain situations, rather than a predominant feature of their investment approach. Therefore, hedge fund managers do not generally allocate the larger portion of investments to ETFs as their strategies are more varied and complex.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.1298 Shaikh Hamid is 20 years old self-made millionaire who has \$1 million of annual income with no mortgages. Because of the high volatility in small-cap stocks, Hamid is unsure about his investments in small-cap stocks. As the investment manager of Hamid, analyze his risk tolerance.

- A. Hamid has a high risk ability and a high willingness to take risk.
- B. Hamid has a low risk ability and a high willingness to take risk.
- C. Hamid has a high risk ability and a low willingness to take risk.

The correct answer is **C**.

The ability to take risk depends on financial circumstances and the willingness to take risk depends on the investor's attitude. Hamid has a high risk ability and a low willingness to take risk.

A is incorrect. It suggests that Hamid has both a high risk ability and a high willingness to take risk. While it is true that Hamid has a high risk ability due to his financial situation and age, his uncertainty about investing in small-cap stocks indicates a low willingness to take on risk, making this option inaccurate.

B is incorrect. It underestimates Hamid's risk ability. It suggests that Hamid has a low risk ability, which contradicts his financial stability, significant annual income, lack of debt, and long investment horizon.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (d): Distinguish between the willingness and the ability (capacity) to take risk in analyzing an investor's financial risk tolerance.

Q.2823 Which of the following is *least likely* true regarding insurance companies?

- A. Property insurance companies have short-term investment horizons.
- B. Insurance companies have high liquidity needs as compared to endowment funds.
- C. Insurance companies invest customer claims with the objective of funding customer premiums.

The correct answer is C.

Insurance companies do not typically invest customer claims with the objective of funding customer premiums. Instead, they invest the premiums they collect from customers to generate returns and ensure they have the financial resources to pay out claims when they arise. The investment of customer premiums is primarily aimed at earning investment income and covering operating costs, including claims payments.

A is incorrect. Property insurance claims can be unpredictable and may require significant payouts in a short period, especially in the event of natural disasters or other large-scale property damage incidents. Therefore, maintaining investments that can be quickly liquidated without significant loss is essential for these companies to meet their claims obligations promptly.

B is incorrect. The assertion that insurance companies have high liquidity needs as compared to endowment funds is accurate. Insurance companies, especially those dealing with life, property, and casualty insurance, face uncertain timing and amounts of claims. This uncertainty necessitates maintaining a higher level of liquidity to ensure that claims can be paid out promptly, regardless of when they arise. Endowment funds, on the other hand, have a more predictable and stable payout structure, typically aimed at funding specific long-term objectives such as scholarships or institutional support. This allows endowment funds to allocate a larger portion of their portfolio to less liquid, potentially higher-yielding investments, as their need for immediate liquidity is generally lower than that of insurance companies.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (e): Describe the investment constraints of liquidity, time horizon, tax concerns, legal and regulatory factors, and unique circumstances and their implications for the choice of portfolio assets.

Q.2890 Which of the following is *least likely* a component of an Investment Policy Statement (IPS)?

- A. Duties and responsibilities of the investment manager
- B. Procedures to update the IPS
- C. Investment expertise of the investment manager

The correct answer is C.

An IPS does not carry information regarding investment areas or the investment focus of the management firm as this information is provided in the firm's investment brochure.

A is incorrect. The duties and responsibilities of the investment manager are a fundamental component of an IPS. This section of the IPS clarifies the roles of the investment manager, setting clear expectations for both the manager and the client. It includes the scope of the manager's authority, decision-making responsibilities, and any specific tasks they are expected to perform. By defining these duties, the IPS helps to prevent misunderstandings and conflicts, ensuring that the investment process runs smoothly and efficiently.

B is incorrect. Procedures to update the IPS are also an essential component. The investment environment and the client's financial situation, goals, and risk tolerance can change over time. Therefore, it is necessary to have a process in place for reviewing and updating the IPS to reflect these changes. This section of the IPS outlines how and when the document will be reviewed, who is responsible for initiating reviews, and under what circumstances revisions will be made. Including procedures for updating the IPS ensures that the investment strategy remains relevant and aligned with the client's current needs and objectives.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (b): Describe the major components of an IPS.

Q.2891 Which of the following investment policy statements is the most appropriate IPS?

- A. Amir Khan aims to earn significant returns on its portfolio of \$2 million in 4 years.
- B. The goal of Jack Wilson, a high net worth individual, is to earn a 20% return on its portfolio from oil sector stocks within the time frame of 5 years.
- C. Michael Trott's investment goal is to beat the Dow Jones Industrial index by 3%.

The correct answer is **B**.

Option B) is correct because it is the most appropriate IPS among the three. Jack Wilson's IPS defines the return goal and the time frame clearly. However, it does not express the risk goals. Amir Khan's IPS does not define the return or risk goals of the client. Michael Trott's IPS provides return goals, but it does not provide any time frame.

A is incorrect. Amir Khan's statement lacks specificity in terms of the desired return and does not mention any risk considerations or specific investment focus. Simply aiming to earn "significant returns" on a portfolio of \$2 million in 4 years is too vague to be actionable or measurable. An effective IPS should provide clear objectives that enable the investor and the investment manager to align the investment strategy with the investor's goals, risk tolerance, and time horizon. Without a defined return goal or risk parameters, it is challenging to devise a strategic investment plan or evaluate performance.

C is incorrect. Michael Trott's investment goal of beating the Dow Jones Industrial index by 3% provides a clear return objective but fails to specify a time frame for achieving this goal. An IPS without a defined time horizon lacks a critical component necessary for planning and assessing the suitability of investment strategies. Additionally, while aiming to outperform a specific benchmark is a common objective, the absence of a time frame and risk considerations limits the effectiveness of the IPS. It is essential for an IPS to encompass all key elements, including investment objectives, time horizon, and risk tolerance, to guide the investment process effectively and measure success accurately.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (b): Describe the major components of an IPS.

Q.2892 Which of the following is *least likely* an example of an absolute risk objective?

- A. The portfolio must not decrease in value by more than 4% at any point in a quarter.
- B. The portfolio must not have greater than a 10% probability of a loss of \$100,000 in 12 months.
- C. The portfolio must not have greater than a 5% probability of returns less than 95% of the S&P 500's returns in 6 months.

The correct answer is **C**.

Absolute risk objectives focus on the actual losses or gains of a portfolio without comparing them to any benchmark or index. They are concerned with the magnitude of potential loss or the volatility of the portfolio itself. In contrast, relative risk objectives involve comparing the performance of a portfolio to that of a benchmark or index to assess its relative performance. Since option C involves comparing the portfolio's returns to the S&P 500's returns, it is inherently a relative risk measure, not an absolute one.

A is incorrect. It is an example of an absolute risk objective. This option specifies a clear, quantifiable limit on the portfolio's potential decrease in value, without making any reference to a benchmark or external index. It sets a standalone criterion for the portfolio's performance, focusing on the absolute outcome of not losing more than 4% in value within a quarter. This type of objective is concerned with the direct outcomes of investment decisions, irrespective of the market or any external performance measures, which is characteristic of absolute risk objectives.

B is incorrect. It also represents an absolute risk objective. This option outlines a specific probability threshold for a monetary loss within a certain time frame, which is a direct measure of the portfolio's risk of loss. Like option A, it does not compare the portfolio's performance to any external benchmark or index but instead sets an absolute criterion for acceptable risk levels. The focus is on limiting the likelihood of a direct, quantifiable loss, which aligns with the principles of absolute risk management. By setting a maximum acceptable probability for a specific loss, it aims to control the portfolio's absolute risk exposure without regard to relative performance metrics.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (c): Describe risk and return objectives and how they may be developed for a client.

Q.2893 Which of the following *least likely* depicts the investor's ability to take risk?

- A. Seventy percent of the investor's home mortgage has already been paid.
- B. The investor has net assets of \$470,000 and an investment horizon of 14 years.
- C. The investor is a Ph.D. in Economics and understands the risk associated with the stock markets.

The correct answer is C.

Option C) depicts the investor's willingness to take risk; not its ability to take risk.

Longer time horizons, greater net assets, having a secure job, and insurance of assets provide information regarding the investor's ability to take risk.

A is incorrect. The investor is less likely to need to liquidate investments to cover debt obligations, allowing for a longer-term investment perspective that can tolerate the volatility associated with higher-risk investments.

B is incorrect. Having net assets of \$470,000 and an investment horizon of 14 years provides a solid financial foundation and a sufficiently long time frame for investing. These factors collectively enhance the investor's ability to take risk. A substantial asset base gives the investor a buffer to absorb potential losses without jeopardizing their financial security. Additionally, a longer investment horizon allows for the possibility of recovering from short-term market fluctuations. The combination of a significant asset base and a long-term investment perspective enables the investor to consider higher-risk investment options that may offer higher returns over time, as they have the financial resilience and time to ride out market volatility.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (d): Distinguish between the willingness and the ability (capacity) to take risk in analyzing an investor's financial risk tolerance.

Q.2894 Which of the following investors has the highest ability to take risk?

- A. A 24-years old unemployed finance graduate with student loans amounting to \$80,000 but in-depth knowledge of financial markets.
- B. A 55-years old war veteran with \$400,000 in savings and medical insurance but no knowledge of investments.
- C. A married couple in their 30's with 4 kids and contractual jobs.

The correct answer is **B**.

The 55-years old war veteran has the highest ability to take risk as he has savings and medical insurance which means he does not expect any liability in the future. His lack of financial knowledge depicts a lower willingness to take risk.

A 24-years old finance graduate only has high knowledge and willingness to take risk but his ability is limited as he does not have a stable income.

A couple in their 30's with contractual jobs and 4 kids probably have future liabilities (medical, children's education, etc.). Therefore, the couple's ability to take risk is limited.

A is incorrect. While the 24-year-old finance graduate possesses in-depth knowledge of financial markets, which may increase his willingness to take on risk, his current financial situation severely limits his ability to do so. Being unemployed and burdened with \$80,000 in student loans creates a precarious financial position that necessitates a more conservative approach to risk. The lack of a stable income means that any losses incurred from high-risk investments could exacerbate his financial strain, making it imprudent to engage in such activities despite his understanding of the markets.

C is incorrect. The married couple in their 30s with four kids and contractual jobs face significant financial responsibilities and uncertainties that constrain their ability to take on risk. The need to provide for their children's current and future needs, such as education and healthcare, coupled with the lack of job security inherent in contractual employment, necessitates a cautious approach to investment. These factors create a scenario where the couple must prioritize financial stability and security over the pursuit of potentially higher returns through riskier investments. Their situation underscores the importance of considering not just the willingness but also the capacity to bear risk when evaluating an individual's or family's investment strategy.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (d): Distinguish between the willingness and the ability (capacity) to take risk in analyzing an investor's financial risk tolerance.

Q.2895 Which of the following is the appropriate definition of a relative risk objective?

- A. A relative risk objective states the probability by which a portfolio can assume risk.
- B. A relative risk objective defines the percentage by which a fund can lose value.
- C. A relative risk objective mentions a percentage by which a portfolio can take risk as compared to a benchmark.

The correct answer is C.

Relative risk objectives define a percentage of value that a fund can lose as compared to its benchmark. For example, 'no greater than a 5% probability of returns more than 3% below the return of the PSX in 12 months' would be a relative risk objective.

A is incorrect. This option suggests that a relative risk objective states the probability by which a portfolio can assume risk. However, this interpretation is misleading. Relative risk objectives do not directly state probabilities but rather set benchmarks for risk in relation to a specific standard, such as a market index. The focus is on comparing the portfolio's risk level to that of the benchmark, rather than quantifying the risk in terms of probabilities. Therefore, this option does not accurately capture the essence of a relative risk objective.

B is incorrect. This option defines a relative risk objective as the percentage by which a fund can lose value. While it is true that relative risk objectives can involve comparisons of potential losses, this definition is too narrow and does not fully encompass the concept. Relative risk objectives are not solely about potential losses but more broadly about how the risk level of a portfolio compares to a benchmark. This comparison can include various aspects of risk and performance, not just the potential for loss. Therefore, this option fails to provide a comprehensive definition of a relative risk objective.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.2898 During a meeting with his investment manager, an investor requested the manager not to invest his money in the Republic of Somalia as the investors believe that the taxes that Somalia collects on investments are used for arms manufacturing. Determine the most appropriate categorization of the investor's request.

- A. The investor's request should be categorized under tax constraints.
- B. The investor's request should be categorized under legal constraints.
- C. The investor's request should be categorized under unique constraints.

The correct answer is **C**.

The investor's request to avoid investing in the Republic of Somalia due to concerns about the use of tax revenues for arms manufacturing should be categorized under unique constraints. Unique constraints refer to specific preferences, ethical considerations, or personal beliefs that influence an investor's decision-making process. These constraints are highly individualized and can vary significantly from one investor to another. In this case, the investor's ethical stance against contributing to arms manufacturing through taxes collected on investments represents a unique constraint. This categorization acknowledges the personal and ethical dimensions of investment decisions, beyond mere financial considerations.

A is incorrect. Tax constraints typically refer to considerations related to the optimization of tax liabilities and the impact of taxation on investment returns. While the investor's concern involves taxes, it is not about the tax treatment or optimization but rather the ethical implications of how tax revenues are used. Therefore, categorizing the investor's request under tax constraints would not accurately capture the essence of the concern, which is fundamentally ethical rather than financial.

B is incorrect. Legal constraints pertain to the adherence to laws, regulations, and legal standards that govern investment activities. These constraints ensure that investments comply with the legal framework of the jurisdictions in which they operate. The investor's request, however, does not relate to legal compliance or regulatory issues. Instead, it is based on a personal ethical stance against investing in a country where tax revenues may be used in a manner that the investor finds objectionable. Thus, the request does not fit within the scope of legal constraints, as it is driven by personal values rather than legal requirements.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (e): Describe the investment constraints of liquidity, time horizon, tax concerns, legal and regulatory factors, and unique circumstances and their implications for the choice of portfolio assets.

Q.2899 Which of the following portfolios will lead to higher risk reduction through diversification?

- A. A portfolio consisting of 3 sectors with a high correlation of assets within the sectors and a high correlation of sectors with each other.
- B. A portfolio consisting of 3 sectors with a high correlation of assets within the sectors and a low correlation of sectors with each other.
- C. A portfolio consisting of 3 sectors with a low correlation of assets within the sectors and a high correlation of sectors with each other.

The correct answer is **B**.

The portfolio that will lead to the lowest risk through diversification would be when the assets under the asset classes are highly correlated with each other while the asset classes have a low correlation with each other.

A is incorrect. The similar price movements across the portfolio mean that when one asset or sector experiences a downturn, it is likely that others will as well, leading to a compounded negative effect on the portfolio's value.

C is incorrect. Despite the diversification within each sector, the similar movement among the sectors means that broader market or economic events affecting one sector are likely to affect the others in a similar manner. Thus, the portfolio's risk is not significantly reduced compared to a portfolio where sectors have low correlations with each other.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.2900 The process of determining the specific percentage to be allocated to specific sectors after analyzing the investor's objectives and constraints is called:

- A. Security selection.
- B. Passive management.
- C. Strategic asset allocation.

The correct answer is **C**.

Strategic asset allocation is the process that involves determining the specific percentage to be allocated to each specific asset class after analyzing the investor's objectives and constraints.

A is incorrect. Security selection refers to the process of choosing individual securities, such as stocks or bonds, within each asset class for investment. This process comes after determining the overall asset allocation and involves analyzing the financial health, market position, and growth prospects of specific companies or issuers. While security selection is an important aspect of portfolio management, it is distinct from the broader strategy of allocating assets among different classes to achieve diversification and risk management objectives.

B is incorrect. Passive management is an investment strategy that involves replicating a market index or benchmark rather than attempting to outperform it through active security selection or market timing. Passive management strategies typically involve investing in index funds or exchange-traded funds (ETFs) that track the performance of a specific index. While passive management can influence the types of assets included in a portfolio, it does not involve the active decision-making process of determining the specific percentages to be allocated to different asset classes based on an investor's objectives and constraints, which is the essence of strategic asset allocation.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.2901 The manager of a pension fund recently deviated from the predetermined weights of asset classes of the pension fund portfolio to take short-term opportunities. This strategy of varying weights is known as:

- A. Technical asset allocation.
- B. Tactical asset allocation.
- C. Risk budgeting.

The correct answer is **B**.

Tactical asset allocation is the process by which a manager deviates from the strategical asset allocation weights to capitalize on short-term expected returns.

A is incorrect. Technical asset allocation refers to the use of historical price data and technical indicators to make investment decisions. This approach focuses on identifying patterns or trends in asset prices to forecast future market movements. While technical analysis can play a role in tactical asset allocation decisions, it is not synonymous with the strategic decision-making process of adjusting portfolio weights based on short-term market opportunities. Technical asset allocation is more about the timing of trades and less about the strategic adjustment of asset class weights in a portfolio.

C is incorrect. Risk budgeting is a portfolio construction technique that allocates risk, rather than capital, across various assets or strategies based on their expected contribution to the overall portfolio risk. This approach focuses on managing and optimizing the risk-return profile of a portfolio by understanding and controlling the sources of risk. While risk budgeting can influence asset allocation decisions, it is fundamentally different from tactical asset allocation. Tactical asset allocation specifically involves making short-term adjustments to the portfolio's asset class weights to exploit market opportunities, whereas risk budgeting is concerned with the distribution of risk across the portfolio to achieve a desired risk level or risk-return trade-off.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (g): Describe the principles of portfolio construction and the role of asset allocation in relation to the IPS.

Q.2902 A 40-years old manager at one of the biggest law firms in New York with net assets of \$1,070,000 and basic social security believes that investing in stocks is most profitable when the stock is less volatile because the stock market is rigged. Using the above assumptions, determine the ability and the willingness of the investor.

- A. High ability and high willingness to take risk
- B. High ability and low willingness to take risk
- C. Low ability but high willingness to take risk

The correct answer is **B**.

As the investor has a longer time-frame, i.e., 20 years to his retirement, sound savings and social security, his ability to take risk is high. However, as per his beliefs, it seems his knowledge of the stock market is limited. Therefore, his willingness to take risk is also limited.

A is incorrect. This option suggests that the investor has both a high ability and a high willingness to take on risk. While the investor's financial situation and time horizon indeed indicate a high ability to take on risk, his beliefs about the stock market suggest a cautious or skeptical attitude towards investing in volatile stocks. The investor's perception that the stock market is "rigged" and his preference for less volatile stocks indicate a low willingness to engage in riskier investment strategies, despite having the financial capacity to do so.

C is incorrect. This option suggests that the investor has a low ability but high willingness to take on risk. This interpretation is not supported by the information provided. The investor's substantial net assets and the long time horizon until retirement clearly indicate a high ability to take on financial risks. However, his beliefs about the stock market and preference for less volatile stocks reflect a cautious approach to investing, indicating a low willingness to take on risk. The investor's financial situation and safety nets like social security support a high ability to absorb risk, but his personal beliefs and investment preferences suggest a reluctance to engage in high-risk investment strategies.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (d): Distinguish between the willingness and the ability (capacity) to take risk in analyzing an investor's financial risk tolerance.

Q.2903 A hedge-fund manager based in Dubai overweights the media sector stocks as compared to the medical sector stocks from the Dubai Index and he does not plan to rebalance the portfolio. This process of overweighting a specific asset class or sector is *most likely* referred to as:

- A. Tactical asset allocation.
- B. Strategic asset allocation.
- C. Securities selection.

The correct answer is **C**.

Securities selection is the process of determining which financial securities are included in a specific portfolio. Therefore, the process of overweighting/underweighting a specific asset class or the process of deviating from index weights of specific individual securities within an asset class is known as securities selection.

A is incorrect. Tactical asset allocation (TAA) is a dynamic investment strategy that actively adjusts a portfolio's asset allocation targeting short-term gains.

B is incorrect. Strategic asset allocation refers to setting target allocations for various asset classes and rebalancing periodically.

Note: It can sometimes be confusing to differentiate between strategic asset allocation and securities selection. However, remember that strategic asset allocation involves setting target allocations for various asset classes and rebalancing the portfolio periodically, whereas securities selection is simply the process of selecting the securities.

CFA Level I, Portfolio Management, Learning Module 4: Basics of Portfolio Planning & Construction. LOS (f): Explain the specification of asset classes in relation to asset allocation.

Learning Module 5: The Behavioral Biases of Individuals

Q.3993 Which of the following is the *most likely* reason for the difficulty in correcting emotional biases? Emotional biases:

- A. Mostly stem from impulses and intuitions.
- B. Are impossible to recognize and adjust to emotional bias.
- C. Cause a deviation in decisions from what is presumed by traditional finance theory.

The correct answer is **A**.

It is normally difficult to correct emotional biases through education, better information, and advice since it results from impulses and intuitions.

B is incorrect. It is possible to recognize and adjust to emotional bias, which may be undesirable to the individual. One can only adapt to emotional bias as it is difficult to correct.

C is incorrect. Both emotional biases and cognitive errors are most likely to cause a deviation in decisions from what is presumed by traditional finance theory.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (c): Describe how behavioral biases of investors can lead to market characteristics that may not be explained by traditional finance.

Q.3994 Which of the following is *most likely* a type of emotional bias?

- A. Hindsight bias.
- B. Conservatism bias.
- C. Loss aversion bias.

The correct answer is **C**.

Emotional bias consists of loss aversion, overconfidence, self-control, status quo, endowment, and regret aversion biases.

A and B are incorrect. Both hindsight and conservatism bias are examples of belief perseverance bias.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision making.

Q.3995 Belief perseverance bias *least likely* include:

- A. Representativeness bias.
- B. Mental accounting bias.
- C. Illusions of control bias.

The correct answer is **B**.

Mental accounting bias is a processing error and not a belief perseverance bias. It refers to mentally distributing money into accounts that impact decisions even though money is fungible.

A and C are incorrect. Both representativeness and illusions of control biases form part of the belief perseverance bias.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.3996 Which of the following is *most likely* a consequence of conservatism bias? A financial market participant (FMP) may:

- A. Be slow to update forecasts even in the presence of new information.
- B. Trade more than is practical since portfolio turnover correlates negatively with investment returns.
- C. Adopt a point of view or a forecast based almost entirely on small sample size or individual, unique data.

The correct answer is **A**.

One of the notable effects of conservatism bias is that the financial market participant (FMP) may be slow to update forecasts even in the presence of new information.

B is incorrect. It relates to the effects of illusion control and not conservatism bias.

C is incorrect. It relates to the consequence of representative bias and not conservatism bias.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.3998 Christine Blake, an investment analyst at XYZ Ltd, presents and narrates the firm's investment results after the COVID 19 pandemic to their clients. During her presentation, Blake states that "*the performance during the pandemic was quite evident as depicted the yield curve and other leading indicators approximately six months prior.*"

The statement by Blake *most likely* indicates what type of bias?

- A. Hindsight bias.
- B. Confirmation bias.
- C. Illusion of control.

The correct answer is **A**.

Hindsight bias is the certainty that a prior event is expected and can be reasonably expected to occur. The COVID 19 impact on the investment returns could appear obvious but, in reality, cannot be accurately predicted. Thus Blake's comments depict hindsight bias.

B is incorrect. Confirmation bias occurs when there is an inclination to look for and notice what approves prior beliefs and disregard what opposes them. Blake's statement is not indicative of a confirmation bias.

C is incorrect. The illusion of control occurs when an individual believes they can influence the outcomes of events when in reality they cannot. This is not the case concerning Blakes's statement.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.3999 Which of the following statements is *most accurate*?

- A. A cognitive dissonance is a form of behavioral bias.
- B. To prevent hindsight bias, the financial market participant (FMP) should prudently record its investment choices.
- C. The effect of confirmation bias cannot be reduced by aggressively looking for data that contest prevailing beliefs.

The correct answer is **B**.

To mitigate hindsight bias, the financial market participant (FMP) should prudently record its investment choices and detail the time in which such decisions were made. This will ensure ease of cross-referencing of prior decisions rather than trusting on recollection.

A is incorrect. Cognitive dissonance, also known as belief perseverance bias, is a category of cognitive error that results from the distress of the mind that arises when new data conflicts with prior beliefs. Cognitive error is a form of behavioral bias and not cognitive dissonance.

C is incorrect. To reduce the effect of confirmation bias, investors should aggressively seek new information that challenges present beliefs.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4000 Base rate neglect and sample size neglect are *most likely* types of which of the following behavioral biases?

- A. Framing bias.
- B. Confirmation bias.
- C. Representativeness bias.

The correct answer is **C**.

Representativeness bias is a belief perseverance bias that categorizes new data based on prior experience and groupings. The two types of representativeness bias that apply to FMPs are base rate neglect and sample size neglect.

A is incorrect. Framing bias is a type of processing error and occurs when an individual responds to an inquiry differently in reference to the context in which it is asked or outlined. Both base rate neglect and sample size neglect are not classified under framing bias.

B is incorrect. Confirmation bias is a belief perseverance bias that seeks and notices what approves past beliefs and disregards anything that opposes them. It reflects a tendency to validate what we wish to believe and is unrelated to the base rate and sample size neglect.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4001 Which of the following is *least likely* a type of emotional bias?

- A. Endowment bias.
- B. Regret-aversion bias.
- C. Illusion of control bias.

The correct answer is **C**.

Illusion of control bias is a cognitive error categorized as a form of belief perseverance bias that refers to the certainty that people can control or affect the conclusion when it is not possible in reality.

A is incorrect. Endowment bias is a form of emotional bias where people tend to appreciate an asset more when they have possession and conflicts with the standard economic theory.

B is incorrect. Regret-aversion bias is a category of emotional bias and occurs when individuals evade making conclusions for fear that it will be incorrect. Regret-aversion bias results either in actions that individuals take or those that they could have opted to take.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision making

Q.4002 ABC Investments Ltd is an investment firm that handles a portfolio of investments for its clients and prides itself in recruiting CFA charterholders. On a recent open day, CEO Kyle Walker stated, *"On average most CFA charterholders work at investment firms."*

The statement by the CEO *most appropriately* indicates which behavioral bias?

- A. Framing bias.
- B. Availability bias.
- C. Representativeness bias.

The correct answer is **B**.

The CEO is basing his observation on a limited range of experience, which is a form of availability bias, by recruiting CFA charterholders at Kyle and Myles Investment Ltd compared to the entire cluster of CFA charterholders recruited in other sectors.

A is incorrect. Framing bias is an information-processing bias that occurs when an individual responds to an inquiry differently based on the context in which it was asked. It is practically possible to explain a justification to an inquiry in more than one option. Framing bias is not applicable in the case of the CEO statement since he was not responding to an inquiry, for example, why the firm only prefers recruiting CFA Charterholders.

C is incorrect. Representation bias refers to the act of categorizing new information based on prior practices. The CEO's claim that the sample size, i.e., the number of CFA Charterholders employed at the investment firm, cannot be proven since data representing the population of CFA Charterholders employed in other sectors is unavailable.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4003 Which of the following strategies is *most appropriate* in mitigating self-control bias by financial market participants (FMPs)?

- A. Drafting an investment plan and introducing personal budgets.
- B. Scrutinizing investments and credibly considering the likelihood of future gains and losses.
- C. Developing a suitable investment policy strategy through conducting in-depth research and scrutinizing prior investment decisions.

The correct answer is **A**.

Self-control bias occurs when individuals opt for short-term gratification as opposed to pursuing long-term goals.

Lack of self-control leads to individuals prioritizing current consumption instead of saving money for future investments, resulting in insufficient savings leading to investment decisions in risky portfolios in anticipation of higher returns.

Lack of self-control may also result in unnecessary borrowing to fund existing consumption.

To overcome self-control bias, the financial market participants (FMP) should design, document an investment plan and introduce a personal budget that can be reviewed regularly.

B is incorrect. It relates to preventing loss-aversion bias.

C is incorrect. It relates to mitigating availability bias.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4004 Disposition effect is *most accurately* defined as:

- A. When an individual values an asset more when they possess it than when they don't.
- B. When individuals take credit for good performance but blame others for poor performance.
- C. Holding of investments that have recorded losses for a long period, and promptly disposing of investments that have recorded profits.

The correct answer is **C**.

The disposition effect is a concept embedded under loss-aversion bias.

It refers to the holding of investments that have recorded losses for a long period while promptly selling off investments that have recorded gains.

A is incorrect. It refers to endowment bias, whereby a person attaches value to an asset when they own it rather than when they don't.

B is incorrect. Self-attribution bias is when an individual takes too much credit for success but apportions blame others for failure.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4005 Which of the following strategies would *best describe* the mitigation process for regret aversion bias? Financial market participants (FMPs) should:

- A. ensure that an investment plan and personal budget are reviewed constantly.
- B. properly diversify respective portfolios by accepting the appropriate risk and returns.
- C. appropriately measure the risk-reducing and return enhancing changes and appropriate asset allocation returns.

The correct answer is **B**.

To mitigate regret aversion bias, the financial market participants should properly diversify by accepting the appropriate risk and returns of the respective portfolios.

A is incorrect. It indicates the measure to mitigate self-control bias.

C is incorrect. It relates to preventive measures for status quo bias.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4006 The sources of availability bias applied by financial market participants (FMPs) *least likely* consists of:

- A. Reliability of the information.
- B. Categorization of the information.
- C. Wide range of experience on the part of FMPs.

The correct answer is **C**.

FMPs apply a narrow range and not a wide range of experience as an availability bias.

The FMPs apply a narrow range of knowledge and not a wide range when considering an estimate.

A and B are incorrect. Both reliability and categorization are sources of availability bias.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4007 Which of the following behavioral biases is *least likely* associated with momentum effect in a financial market?

- A. Regret bias.
- B. Availability bias.
- C. Overconfidence bias.

The correct answer is C.

Overconfidence bias is associated with bubbles whereby investors are more active, and trading volume rises, reducing expected returns.

A and B are incorrect. Both regret and availability biases are associated with momentum effect.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (c): Describe how behavioral biases of investors can lead to market characteristics that may not be explained by traditional finance.

Q.4008 Home bias anomaly is *most likely* to occur when:

- A. Investors are proactive, and an increase in trading volume resulting in low returns.
- B. A favorable evaluation is extended to some characteristics of stock compared to others.
- C. Portfolios display a bias in favor of local securities compared to international portfolios.

The correct answer is C.

Home bias anomaly occurs when portfolios display a solid bias in favor of domestic securities compared to global portfolios.

A is incorrect. It depicts overconfidence bias which contributes to a bubble market whereby investors are proactive, and an increase in trading volume resulting in lower profits.

B is incorrect. It defines the halo effect in a stock value whereby favorable evaluation criteria are applied to certain stock characteristics compared to other stocks.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (c): Describe how behavioral biases of investors can lead to market characteristics that may not be explained by traditional finance.

Q.4010 Value stocks are *most likely* characterized by which of the following?

- A. High price-to-earnings ratio.
- B. High book-to-market equity.
- C. High price-to-dividends ratio.

The correct answer is **B**.

Value stocks are mainly characterized by low price-to-earnings ratios, high book-to-market equity, and low price-to-dividend ratios.

A is incorrect. Value stocks are characterized by a low price-to-earnings ratio and not a high price-to-earnings ratio.

C is incorrect. Value stocks are characterized by a low price-to-dividends ratio and not a high price-to-dividend ratio.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (c): Describe how behavioral biases of investors can lead to market characteristics that may not be explained by traditional finance.

Q.4011 Which of the following is *least likely* a form of cognitive errors?

- A. Processing errors.
- B. Loss aversion bias.
- C. Belief perseverance bias.

The correct answer is **B**.

Loss aversion bias is a form of emotional bias. There are six emotional biases: loss aversion, overconfidence, self-control, status quo, endowment, and regret aversion.

A and C are incorrect. Cognitive errors come in two forms: belief perseverance bias and processing errors.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4012 Which of the following biases *most likely* results from individuals tend to overweight their prior probability of the event and underweight the new information?

- A. Conservatism bias.
- B. Confirmation bias.
- C. Representative bias.

The correct answer is **A**.

Conservatism bias is a belief perseverance bias in which people give their past beliefs too much weight and the new knowledge too little, resulting in outcomes that are underreacting to the new knowledge.

B is incorrect. Confirmation Bias is the tendency to seek out or recognize information that supports one's existing ideas while ignoring information that contradicts them.

C is incorrect. Representativeness bias is the tendency to categorize new information based on previous experiences and classifications.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4013 Which of the following is *least likely* a consequence of conservatism bias?

- A. Slowness to update forecasts when presented with new information.
- B. Considering only positive data and ignoring the negative about an existing investment.
- C. Maintaining a previous belief rather than dealing with the stress of updating beliefs given new data.

The correct answer is **B**.

Considering only positive data and ignoring the negative data about an existing investment is a consequence of confirmation bias.

A and C are incorrect. The two consequences of conservatism bias are:

- Slow to update forecasts even when presented with new information.
- Maintaining a previous belief rather than dealing with the stress of updating beliefs given new data.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4014 Which of the following biases is *most likely* represents a bias in which individuals believe that they can control or influence outcomes when they actually cannot?

- A. Hindsight bias.
- B. Illusion of control bias.
- C. Anchoring and adjustment bias.

The correct answer is **B**.

Illusion of control bias is individuals believe that they can control or influence outcomes when they actually cannot.

A is incorrect. Hindsight bias refers to the tendency to believe that past occurrences were predictable and reasonable to expect.

C is incorrect. Anchoring and adjustment bias refer to the practice of basing subsequent assessments, judgments, and conclusions on an initial piece of data.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4015 Which of the following is *least likely* a consequence of overconfidence bias?

- A. Holding inadequately diversified portfolios.
- B. Overestimating predicted gains and underestimating risks.
- C. Choosing an investment based on the amount of advertising or press coverage.

The correct answer is **C**.

Choosing an investment based on the amount of advertising or press coverage is a consequence of availability bias.

A and B are incorrect. Consequences of overconfidence bias include:

- Holding inadequately diversified portfolios, leading to high downside risk;
- Overestimating predicted gains and underestimating risks.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4016 Which of the following is *least likely* a consequence of self-control bias?

- A. Saving insufficiently for the future.
- B. Borrow excessively to finance current spending.
- C. Failing to investigate other investing opportunities.

The correct answer is **C**.

Failing to investigate other investing opportunities is a consequence of status quo bias.

A and B is incorrect. Consequences of self-control bias include:

- Save insufficiently for the future, which may lead to portfolios taking on too much risk in the pursuit of higher returns;
- Borrow excessively to finance current spending.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4017 Which of the following is *most likely* a consequence of availability bias?

- A. A lack of diversification.
- B. Borrow excessively to finance current spending.
- C. Overestimating predicted gains and underestimating risks.

The correct answer is **A**.

A lack of diversification is a consequence of availability bias. This failure may occur because individuals' decisions are based on a limited set of experiences.

B is incorrect. Borrowing excessively to finance current spending is a consequence of self-control bias.

C is incorrect. Overestimating predicted gains and underestimating risks is a consequence of overconfidence bias.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4018 Which of the following is *most likely* a method of detecting and overcoming loss aversion bias?

- A. A disciplined investment approach.
- B. Fearing that profits may diminish, selling investments in a gain position much earlier.
- C. Using fundamental analysis to keep investments in a loss position for longer than necessary.

The correct answer is **A**.

A disciplined investment approach is a good way to alleviate the impact of the loss-aversion bias.

B and C are incorrect. Fearing that profits may diminish, selling investments in a gain position much earlier than justified by fundamental analysis and using fundamental analysis to keep investments in a loss position for longer than necessary in the hopes of recouping losses are consequences of loss aversion bias.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4019 Which of the following is *most likely* an emotional bias in which investors avoid making decisions for fear of making a bad decision?

- A. Status quo bias.
- B. Endowment bias.
- C. Regret-aversion bias.

The correct answer is C.

Regret-aversion bias is an emotional bias in which investors avoid making judgments for fear of making a bad decision. It has two dimensions: actions taken by people and actions that people may have taken.

Regret-aversion bias is an emotional bias in which investors avoid making judgments for fear of making a bad decision. It has two dimensions: actions taken by people and actions that people may have taken.

A is incorrect. Status quo bias is an emotional bias where people prefer to do nothing rather than change, even when change is necessary.

B is incorrect. Endowment bias is an emotional bias where people value an asset higher when they own it than when they don't.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4020 Which of the following is *least likely* a belief perseverance bias?

- A. Hindsight bias.
- B. Conservatism bias.
- C. Loss aversion bias.

The correct answer is **C**.

Loss aversion bias is an emotional bias. There are six emotional biases. These are loss aversion, overconfidence, self-control, status quo, endowment, and regret aversion.

A and B are incorrect. The belief perseverance biases include conservatism, confirmation, representativeness, illusion control, and hindsight. They are caused by the mental discomfort that emerges when new knowledge contradicts previously held concepts, known as cognitive dissonance.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Q.4021 Which of the following is *most likely* a consequence of conservatism bias?

- A. Properly analyzing and considering new information.
- B. Slow to update forecasts even when presented with new information.
- C. Developing a screening criterion while ignoring information that contradicts the validity of the criteria.

The correct answer is **B**.

Conservatism bias is a belief perseverance bias in which people mistakenly incorporate new contradicting information into their previous beliefs. The consequences of conservatism bias are:

- Slow to update forecasts even when presented with new information.
- Maintaining a previous belief rather than dealing with the stress of updating beliefs given new data.

A is incorrect. Properly analyzing and considering new information is a method of detecting and overcoming conservatism bias.

C is incorrect. Developing a screening criterion while ignoring information that contradicts the validity of the criteria is a consequence of confirmation bias.

CFA Level I, Portfolio Management, Learning Module 5: The Behavioral Biases of Individuals. LOS (b): Discuss commonly recognized behavioral biases and their implications for financial decision-making.

Learning Module 6: Introduction to Risk Management

Q.125 Which risk is *most likely* to disappear when you have a diversified portfolio?

- A. Interest rate risk
- B. Systematic risk
- C. Unsystematic risk

The correct answer is **C**.

Unsystematic risk: The risk that is specific to an industry or firm.

Systematic risk: Also called market risk

Diversifying will not change interest rate risk.

A is incorrect. Interest rate risk is a type of systematic risk that affects all securities in the market. It is the risk that arises from the fluctuation in interest rates which can affect the value of investments in bonds and other fixed-income securities. Since interest rate changes impact the entire market, diversifying a portfolio cannot eliminate this risk. Interest rate risk is inherent to all investments and must be managed, but not through diversification alone.

B is incorrect. Systematic risk, also known as market risk, is the risk inherent to the entire market or market segment. This type of risk is caused by factors that affect the overall economy or securities markets, such as changes in interest rates, inflation, recessions, or political instability. Since systematic risk affects the entire market, it cannot be eliminated through diversification. All stocks and securities are subject to systematic risk, making it impossible to avoid through traditional diversification methods.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (b): Describe features of a risk management framework.

Q.127 A portfolio consisting of perfectly positive correlated assets:

- A. Does not affect diversification.
- B. Minimizes unsystematic risk.
- C. Minimizes systematic risk.

The correct answer is **A**.

A portfolio consisting of perfectly positive correlated assets has no effect of diversification.

B is incorrect. Unsystematic risk, also known as specific risk, is the risk that is unique to a particular company or industry. By investing in assets that are perfectly positively correlated, an investor is essentially exposed to the same types of unsystematic risk across all investments, as they would all respond identically to market changes. Therefore, this approach does not minimize unsystematic risk but rather, it fails to mitigate it through diversification.

C is incorrect. Systematic risk, also known as market risk, is the risk inherent to the entire market or market segment. Systematic risk affects the overall market, not just a particular stock or industry. Since it impacts the entire market, it cannot be eliminated through diversification. A portfolio of perfectly positively correlated assets does not minimize systematic risk; instead, it means that the portfolio is fully exposed to market movements without the cushioning effect that diversification among non-correlated or negatively correlated assets might provide.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (d): Explain how risk tolerance affects risk management.

Q.1183 Risk communication across the organization is *most likely* part of the:

- A. Risk management process.
- B. Risk management framework.
- C. Risk governance.

The correct answer is **B**.

Risk communication concerns across the organization is one of the several activities defined in the risk management framework.

A is incorrect. While risk communication is an integral part of the overall risk management process, which includes the identification, assessment, response, and monitoring of risk, the question specifically refers to the structural and organizational aspect of risk communication. The risk management process focuses more on the operational steps taken to manage risk, rather than the overarching structure and policies that govern how risk communication is implemented across the organization. Therefore, the risk management process is not the most accurate answer in this context.

C is incorrect. Risk governance refers to the higher-level framework that defines the roles, responsibilities, and accountabilities of various stakeholders in managing risk, as well as the policies and principles guiding the organization's risk management practices. While risk governance sets the tone and direction for how risk is managed within an organization, including aspects of risk communication, the question specifically targets the operational aspect of how risk communication is carried out across the organization. Risk governance provides the overarching principles and structure, but the risk management framework is what operationalizes these principles, including the mechanisms for risk communication.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (b): Describe features of a risk management framework.

Q.1188 The purpose of risk governance is to seek to manage risk in order to achieve:

- A. Organizational goals.
- B. Senior management's goals.
- C. Shareholders' goals.

The correct answer is **A**.

Risk governance plays a crucial role in ensuring that an organization can effectively manage and mitigate risks to achieve its overarching goals. This comprehensive approach to risk management involves setting the right policies, procedures, and controls to manage risk across the organization. It is designed to align risk appetite and strategy, enhance risk response decisions, and reduce operational surprises and losses. By integrating risk management practices into the organization's governance, strategy, and planning processes, risk governance ensures that all levels of the organization are involved in identifying, assessing, and responding to risks in a manner that supports the achievement of organizational objectives.

B is incorrect. Suggesting that the purpose of risk governance is solely to achieve senior management's goals is a narrow view that overlooks the broader objectives of risk governance. While senior management plays a significant role in setting the direction and risk appetite of the organization, risk governance aims to serve the interests of the entire organization, including its employees, customers, and other stakeholders. By focusing only on senior management's goals, this option fails to recognize the importance of aligning risk management efforts with the organization's overall strategy and objectives, which are essential for sustainable growth and success.

C is incorrect. While shareholders' goals, particularly in terms of maximizing shareholder value, are important for any organization, risk governance seeks to balance these goals with the broader objectives of the organization. This includes ensuring the safety and well-being of employees, maintaining customer satisfaction, and contributing to the community and environment. Risk governance involves a holistic approach to managing risk that considers the interests of all stakeholders, not just shareholders. By focusing solely on shareholders' goals, this option misses the essence of risk governance, which is to manage risk in a way that supports the achievement of the organization's comprehensive set of goals.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (c): Define risk governance and describe elements of effective risk governance.

Q.1189 The risk associated with the uncertainty regarding the fulfillment of a contractual obligation by a counterparty is called:

- A. market risk.
- B. credit risk.
- C. liquidity risk.

The correct answer is **B**.

Credit risk is the uncertainty about whether counterparties will fulfill their obligations.

B is incorrect. Suggesting that the purpose of risk governance is solely to achieve senior management's goals is a narrow view that overlooks the broader objectives of risk governance. While senior management plays a significant role in setting the direction and risk appetite of the organization, risk governance aims to serve the interests of the entire organization, including its employees, customers, and other stakeholders. By focusing only on senior management's goals, this option fails to recognize the importance of aligning risk management efforts with the organization's overall strategy and objectives, which are essential for sustainable growth and success.

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CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (c): Define risk governance and describe elements of effective risk governance.

Q.1190 The risk of restrictions on the firm's activities is associated with the:

- A. Regulatory risk.
- B. Credit risk.
- C. Governmental risk.

The correct answer is **A**.

Regulatory risk is associated with changes in the regulatory framework that can hinder the activities of an organization.

B is incorrect. Credit risk pertains to the possibility that a borrower will default on their financial obligations to the lender. It is primarily concerned with the creditworthiness of counterparties in financial transactions and does not directly relate to restrictions on a firm's activities due to regulatory changes. While credit risk can impact a firm's financial health and its ability to secure financing, it does not encompass the broader scope of regulatory risks that can affect a firm's operational, strategic, and compliance frameworks.

C is incorrect. Governmental risk, often referred to as political risk, involves the risk that government actions or instability can adversely affect a firm's operations or profitability. This can include changes in government policies, expropriation of assets, political unrest, or changes in trade policies. While governmental risk can overlap with regulatory risk, especially in cases where government actions result in new regulations, it is broader and encompasses a wider range of non-regulatory actions that can impact a firm. Regulatory risk is specifically focused on the risk associated with changes in the regulatory framework within which a firm operates.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (c): Define risk governance and describe elements of effective risk governance.

Q.1191 The non-financial risk associated with organizations is *most likely* called:

- A. Market risk.
- B. Tax risk.
- C. Interest rate risk.

The correct answer is **B**.

The non-financial risk associated with organizations is most accurately referred to as tax risk. Non-financial risks encompass a broad range of risks that are not directly related to the financial markets or financial instruments. These include operational risks, legal risks, and external risks such as political, environmental, and indeed, tax risks. Tax risk specifically pertains to the uncertainty and potential financial loss that organizations face due to changes in tax laws, tax rates, or disputes over tax filings. This type of risk can significantly impact an organization's financial planning and operations, making it a critical area of concern for businesses.

A is incorrect. Market risk, also known as systematic risk, refers to the potential for investors to experience losses due to factors that affect the overall performance of the financial markets. This includes changes in interest rates, exchange rates, and stock market fluctuations. Market risk affects the value of investments in stocks, bonds, and other securities, making it a financial rather than a non-financial risk. Therefore, it does not accurately describe the non-financial risks associated with organizations, such as tax risk.

C is incorrect. Interest rate risk is a type of financial risk that arises from fluctuations in interest rates. It affects the value of fixed-income securities, such as bonds, as well as loans and mortgages. When interest rates rise, the value of existing bonds typically falls, and vice versa. This risk is directly related to the financial markets and the performance of financial instruments, distinguishing it from non-financial risks like tax risk. Interest rate risk is a concern for investors and financial institutions, not a direct representation of the non-financial risks faced by organizations in their operational or external environments.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (f): Identify financial and non-financial sources of risk and describe how they may interact.

Q.1192 Which of the following is *least likely* a type of financial risk?

- A. Credit risk
- B. Accounting risk
- C. Liquidity risk

The correct answer is **B.**

Accounting risk is least likely to be considered a direct type of financial risk when compared to credit risk and liquidity risk. Financial risk typically encompasses those risks that directly impact the financial standing or financial transactions of an entity. These include, but are not limited to, risks associated with the ability of counterparties to fulfill their financial obligations (credit risk), the risk of loss resulting from inadequate or failed internal processes, people, and systems, or from external events (operational risk), and the risk associated with the inability to convert assets into cash without significant loss in value (liquidity risk).

A is incorrect. Credit risk is a fundamental type of financial risk. It refers to the risk that a borrower will default on any type of debt by failing to make the required payments. In the financial markets, this can relate to the risk inherent in lending money or extending credit. It is a critical risk for banks, financial institutions, and investors, making it a core component of financial risk management practices. Credit risk assessment and management are essential for maintaining the financial health and stability of lending institutions and for ensuring the integrity of the broader financial system.

C is incorrect. It cannot convert assets to cash quickly enough. This risk can affect both financial institutions and companies outside the financial sector. In the context of investments, liquidity risk is the risk that an investor will not be able to sell or liquidate an asset at or near its value due to a lack of buyers or an inefficient market. Managing liquidity risk is crucial for the ongoing solvency and operational capability of any financial entity or investment portfolio.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (d): Explain how risk tolerance affects risk management.

Q.1193 The risk that arises from incorrectly concluding that extreme events are *least likely* to occur than they actually are is called:

- A. Environmental risk.
- B. Risk of natural disasters.
- C. Tail risk.

The correct answer is C.

Tail risk refers to the risk of extreme market movements that are not captured by standard risk models. This type of risk is associated with events that have a small probability of occurring but can lead to significant losses if they do happen. The term "tail" comes from the shape of the probability distribution curves used in finance, where the ends or "tails" of the distribution represent rare and extreme outcomes. Traditional financial models often assume a normal distribution of returns, which underestimates the likelihood and impact of these extreme events.

A is incorrect. Environmental risk refers to the potential for environmental changes or disasters to impact financial markets or specific investments. While environmental risks can lead to significant financial consequences, they are not specifically related to the underestimation of extreme market events represented by tail risk. Environmental risks encompass a broader range of issues, including climate change, natural disasters, and pollution, which can affect the performance of investments in various sectors.

B is incorrect. The risk of natural disasters, similar to environmental risk, involves the potential financial impact of natural events such as earthquakes, hurricanes, and floods. While these events can cause significant damage and lead to financial losses, the term "risk of natural disasters" does not specifically address the concept of tail risk, which is focused on the underestimation of the likelihood and impact of extreme market movements. Natural disaster risk is more concerned with the direct physical and economic effects of natural events on specific regions, industries, or assets.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (f): Identify financial and non-financial sources of risk and describe how they may interact.

Q.1194 The longevity risk or risk of living longer than anticipated can be mitigated by:

- A. buying insurances.
- B. buying lifetime annuities.
- C. buying T-Bills.

The correct answer is **B**.

Buying insurances mitigate the risk of mortality.

T-Bills have a given maturity. Therefore, they cannot be used to mitigate the risk of longevity.

A is incorrect. While buying insurance can protect against various risks, such as health issues or property damage, it does not directly mitigate longevity risk. Insurance policies typically provide coverage for specific events or losses and do not offer a continuous income stream in retirement. Therefore, while insurance is an important part of a comprehensive financial plan, it does not address the core issue of ensuring sustained income in the event of an unexpectedly long life.

C is incorrect. Treasury Bills (T-Bills) are short-term government securities with maturities ranging from a few days to 52 weeks. They are considered a safe investment, but they do not provide a solution to longevity risk. T-Bills need to be rolled over upon maturity to maintain investment, and their interest rates do not guarantee an income stream sufficient to cover living expenses indefinitely. Furthermore, T-Bills are subject to interest rate risk and inflation risk, which can erode the purchasing power of the income they generate. Therefore, while T-Bills can be part of a diversified investment portfolio, they do not offer a direct means of mitigating longevity risk.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (d): Explain how risk tolerance affects risk management.

Q.1195 Which of the following is used to measure the price sensitivity of bonds to the changes in market interest rates?

- A. Duration
- B. Yield-to-maturity
- C. Beta

The correct answer is **A**.

Duration is used to measure the price sensitivity of debt securities to the interest rate.

B is incorrect. Yield-to-maturity (YTM) is a different concept from duration. YTM is the total return anticipated on a bond if the bond is held until it matures. It is a comprehensive measure that considers the annual income payments, the bond's current market price, and the amount that will be received at maturity. While YTM does factor into the calculation of a bond's price and can be affected by changes in interest rates, it does not directly measure the bond's price sensitivity to those changes. Instead, YTM provides an estimate of the bond's overall expected return, assuming it is held to maturity and all payments are made as scheduled.

C is incorrect. Beta is a measure of the volatility, or systematic risk, of a security or a portfolio in comparison to the market as a whole. It is primarily used in the context of equity securities and portfolios to determine their sensitivity to market movements. A beta greater than 1 indicates that the security's price is expected to be more volatile than the market, while a beta less than 1 suggests that the security is expected to be less volatile. Although beta is a critical measure in assessing the risk and expected return of equities, it does not apply to the price sensitivity of bonds to interest rate changes.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (d): Explain how risk tolerance affects risk management.

Q.1197 BCG Bank has a one-month Value at Risk (VaR) of \$600 million with the probability of 7%, which means:

- A. A one-month maximum loss of \$600 million will occur 7% of the time.
- B. A one-month minimum loss of \$600 million will occur 7% of the time.
- C. A loss of \$600 million will occur one month from now.

The correct answer is **B**.

Value at Risk (VaR) is a measure of the potential loss on a portfolio of assets, given a certain level of confidence and a specific period of time. In this case, BCG Bank has a one-month VaR of \$600 million with a probability of 7%.

Another way to interpret a one-month VaR of \$600 million with a probability of 7% is that, there is a 7% chance that the bank will experience a minimum loss of \$600 million over the course of one month. This means that the bank's portfolio of assets has a 93% chance of not losing more than \$600 million over the same period.

A is incorrect. This option suggests that a one-month maximum loss of \$600 million will occur 7% of the time. However, this interpretation is slightly misleading. VaR does not predict the maximum loss but rather the minimum loss at a certain confidence level. Therefore, stating it as a "maximum" loss does not accurately represent the concept of VaR, which is focused on the threshold that losses are not expected to exceed only 7% of the time, implying that losses could be greater than \$600 million but not less, within the specified period.

C is incorrect. This option implies that a loss of \$600 million is certain to occur one month from now, which misinterprets the probabilistic nature of VaR. VaR provides a measure of potential loss at a specific confidence level (in this case, 7%) but does not predict when a loss will occur. It indicates the risk of experiencing a loss of at least \$600 million within a one-month period, but it does not guarantee that such a loss will happen in the next month. The essence of VaR is in its ability to quantify risk in terms of both the size of the potential loss and the probability of that loss occurring, not in forecasting specific losses for specific future periods.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (d): Explain how risk tolerance affects risk management.

Q.1198 Matt Frank is an equity analyst at the Istanbul Income Fund who wants to measure the benefits of diversification in equity portfolios. Which of the following measures serves the purpose of measuring diversification?

- A. Beta
- B. Standard deviation
- C. Delta

The correct answer is **B**.

The measure that serves the purpose of measuring diversification in equity portfolios is standard deviation.

Standard deviation is a measure of risk and volatility in an equity portfolio. It quantifies how much the returns of individual assets within the portfolio vary from the portfolio's overall average return. A lower standard deviation indicates less variability or risk in the portfolio, which can be a result of diversification. Therefore, standard deviation is a common measure used to assess the benefits of diversification in equity portfolios. A well-diversified portfolio typically has a lower standard deviation compared to a concentrated or undiversified portfolio.

A is incorrect. Beta measures the sensitivity of an asset's returns to the returns of the market or a benchmark index, not the diversification of a portfolio. It is a gauge of systematic risk, which is the risk inherent to the entire market or market segment. While beta can indicate how much risk an individual asset or portfolio may add to a diversified portfolio, it does not measure the benefits of diversification itself. Beta is more relevant in understanding how a specific asset's returns move in relation to market movements and is used in the Capital Asset Pricing Model (CAPM) to calculate the expected return of an asset based on its beta and the expected market returns.

C is incorrect. Delta is a measure used in options trading that indicates how the price of an option is expected to change relative to a \$1 change in the price of the underlying asset. It is part of the Greeks, which are parameters used to measure different types of risk in options portfolios. Delta is specifically related to price sensitivity and does not serve the purpose of measuring diversification in equity portfolios. Diversification involves spreading investments across various assets to reduce risk, whereas delta is concerned with the sensitivity of an option's price to movements in its underlying asset's price.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (f): Identify financial and non-financial sources of risk and describe how they may interact.

Q.1199 Which of the following will pay for losses incurred to the employer by employees' theft or misconduct?

- A. Fidelity Bond
- B. Euro Bond
- C. Surety

The correct answer is **A.**

A fidelity bond is a form of insurance protection that businesses purchase to safeguard against losses caused by fraudulent acts or dishonesty of their employees. This type of bond is particularly important in industries where employees handle cash or sensitive financial information. It serves as a safeguard, ensuring that the employer is compensated for any financial losses resulting from employee theft, embezzlement, or other forms of misconduct. The fidelity bond is essentially a guarantee from the insurer to the employer that they will be protected against losses due to dishonest acts by their employees.

B is incorrect. Euro Bond refers to a type of international bond that is issued in a currency not native to the country where it is issued. For example, a bond issued in US dollars by a European company. Euro Bonds are used by companies, governments, or other entities to raise capital in the international market. They are not designed to protect against losses from employee theft or misconduct. Therefore, suggesting that a Euro Bond would cover such losses misunderstands the purpose and function of Euro Bonds in the financial markets.

A surety bond is a three-party agreement where the surety (insurance company) guarantees to a party (obligee) that a second party (principal) will fulfill an obligation or series of obligations to the obligee. This might include fulfilling a contract or complying with legal requirements. While surety bonds do provide a form of financial guarantee, they are not specifically designed to cover losses incurred due to employee theft or misconduct. Instead, surety bonds are more commonly used in the context of contractual obligations, licensing, and permits. Therefore, suggesting that a surety bond directly pays for losses incurred by employee theft or misconduct does not accurately capture the primary function of surety bonds.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (f): Identify financial and non-financial sources of risk and describe how they may interact.

Q.1200 Which of the following "Greeks" measures the amount that an option contract's price changes in reaction to a change in the implied volatility of the underlying asset?

- A. Rho
- B. Vega
- C. Gamma

The correct answer is **B.**

Derivatives risk measures are also referred to as "Greeks." Vega measures the sensitivity of derivatives value to the volatility of prices of underlying assets.

A is incorrect. Rho measures the sensitivity of an option's price to changes in the risk-free interest rate. Specifically, it represents the change in the price of an option for a one percentage point change in interest rates. Rho is more relevant for options with longer time to expiration, as the impact of interest rate changes is more pronounced over longer periods. However, Rho's impact on option pricing is generally considered to be less significant than the effects of other Greeks, such as Delta, Gamma, and Vega, especially for short-term options.

C is incorrect. Gamma measures the rate of change of an option's Delta with respect to changes in the price of the underlying asset. In other words, Gamma reflects the sensitivity of Delta itself to movements in the underlying asset's price. A high Gamma value indicates that Delta is highly sensitive to price changes, which means the option's price is likely to exhibit significant volatility as the underlying asset price changes. Gamma is highest for at-the-money options and decreases as the option becomes more deeply in-the-money or out-of-the-money. Understanding Gamma is essential for managing the risk of an options portfolio, especially for delta-neutral hedging strategies.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (e): Describe risk budgeting and its role in risk governance.

Q.2850 The process of adjusting the risk being taken towards the risk to be taken to maximize the portfolio's value is called:

- A. Risk measurement.
- B. Risk exposure.
- C. Risk management.

The correct answer is C.

Risk management is the process of adjusting the risk being taken towards the risk to be taken to maximize the company's or portfolio's value or the individual's overall utility.

A is incorrect. Risk measurement is a component of the broader risk management process. It involves quantifying risk in terms of likelihood and impact, which is a crucial step in understanding the overall risk exposure of a portfolio or organization. However, risk measurement on its own does not encompass the actions taken to adjust or control risk, which is the essence of risk management.

B is incorrect. Risk exposure refers to the extent to which a company or individual is vulnerable to various risks. While understanding risk exposure is a critical part of risk management, it is not synonymous with the process itself. Risk exposure is more about identifying and quantifying risks, whereas risk management includes the additional steps of prioritizing and implementing strategies to mitigate or capitalize on those risks to maximize value.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (b): Describe features of a risk management framework.

Q.2851 Which of the following is *least likely* a goal of the risk management process?

- A. Identifying the risk
- B. Taking the risk to maximize the company's value
- C. Minimizing the risk

The correct answer is **C**.

While minimizing risk might seem like a logical goal of risk management, it is not the primary objective. The main goal is not to minimize all risks but to manage them in a way that balances risk with opportunity. Excessive risk aversion can hinder a company's ability to innovate and grow. Therefore, the risk management process focuses on making informed decisions that allow the company to pursue strategic opportunities while managing the associated risks in a way that is aligned with the company's overall objectives and risk appetite. This involves accepting certain risks when the potential rewards justify doing so, rather than seeking to minimize risk at all costs.

A is incorrect. Identifying the risk is actually a crucial initial step in the risk management process. Without the identification of potential risks, it would be impossible to assess or manage them effectively. This step involves recognizing the various risks that could impact the company's operations, financial performance, or strategic objectives. It is the foundation upon which the rest of the risk management process is built, as it allows for a systematic approach to analyzing and addressing risks.

B is incorrect. Taking risks to maximize the company's value is an essential aspect of strategic risk management. This option is often misunderstood; however, it is important to recognize that risk-taking is not inherently negative. Strategic risk-taking involves making calculated decisions to pursue opportunities that have the potential to enhance the company's value, even if they involve certain risks. The key is in assessing the potential benefits against the risks to ensure that the decisions made are in the best interest of the company and its stakeholders. This approach recognizes that avoiding all risks can limit a company's growth and competitive advantage.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (d): Explain how risk tolerance affects risk management.

Q.2853 Which of the following key factors of the risk management framework involves the quantitative assessment of potential sources of risk and the organization's risk exposure?

- A. Risk analysis and integration
- B. Risk identification and measurement
- C. Risk infrastructure

The correct answer is **B**.

Risk identification and measurement is the key element of the risk management framework that involves the quantitative assessment of potential sources of risk and the organization's risk exposure.

A is incorrect. Risk analysis and integration refer to the process of analyzing identified risks and integrating risk management practices into the organization's overall strategy and operations. While this is an important aspect of risk management, it does not specifically focus on the quantitative assessment of potential sources of risk and the organization's risk exposure. Instead, it deals with how identified and measured risks are analyzed in the context of the organization's objectives and how risk management is embedded within the organizational processes and decision-making.

C is incorrect. Risk infrastructure pertains to the systems, processes, and frameworks established within an organization to support effective risk management. This includes the policies, procedures, technology, and governance structures that enable the identification, measurement, monitoring, and control of risks. Although risk infrastructure is critical for implementing risk management practices, it does not directly involve the quantitative assessment of potential sources of risk and the organization's risk exposure. Instead, it provides the foundation and tools necessary for carrying out these and other risk management activities.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (b): Describe features of a risk management framework.

Q.2854 Which of the following is *least likely* an element of the risk management framework for an individual?

- A. Risk communication
- B. Risk identification and measurement
- C. Risk monitoring

The correct answer is **A**.

As the individual is its own governance body, there is no need for risk communication. Therefore, option A) is least likely an element of the risk management framework for an individual.

B is incorrect. Risk identification and measurement are fundamental components of any risk management framework, including for individuals. This process involves recognizing potential risks that could impact one's financial goals and assessing the magnitude and likelihood of those risks. Without accurately identifying and measuring risks, individuals cannot effectively manage or mitigate those risks to protect their financial well-being.

C is incorrect. Risk monitoring is another essential element of the risk management framework for individuals. It involves regularly reviewing and assessing the risk landscape to identify any changes or new risks that may have emerged. Continuous monitoring ensures that individuals can adjust their risk management strategies as needed to respond to evolving risks and maintain alignment with their financial objectives. Without ongoing risk monitoring, individuals may fail to recognize shifts in the risk environment, potentially exposing themselves to unforeseen threats.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (b): Describe features of a risk management framework.

Q.2855 Which of the following are two important areas in which governing bodies drive the risk framework?

- A. Defining the risk tolerance of the organization and self-insuring the governing body
- B. Determining the organization's goals and defining the risk appetite/tolerance of the organization
- C. Determining the organization's goals and driving the organization away from taking risks

The correct answer is **B**.

The two important areas in the governing body that drive the risk framework are determining the organization's goals and defining the risk appetite/tolerance of the organization.

A is incorrect. While defining the risk tolerance of the organization is crucial, self-insuring the governing body is not typically considered a primary area driving the risk framework. Self-insurance might be a risk management strategy for specific risks, but it does not constitute a foundational element in the development of an organization's overall risk framework. The focus should instead be on broader strategies that encompass the entire spectrum of risks the organization faces.

C is incorrect. Although determining the organization's goals is essential, driving the organization away from taking risks is not a balanced approach to risk management. Risk-taking is an inherent part of business operations and strategic growth. A well-defined risk framework does not aim to eliminate risk-taking altogether but to manage it in a way that aligns with the organization's risk appetite and tolerance. This approach ensures that risks are taken judiciously, with a clear understanding of potential benefits and drawbacks, rather than avoiding risk-taking entirely, which could stifle innovation and growth opportunities.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (d): Explain how risk tolerance affects risk management.

Q.2856 The *most likely* risk tolerance activity that is conducted by the risk governance body of an organization is:

- A. Selecting portfolios of acceptable risk activities.
- B. Producing the highest returns at any given risk level.
- C. Establishing the organization's risk appetite.

The correct answer is C.

Establishing the organization's risk appetite is the important risk tolerance activity conducted by the risk governance body of an organization.

A and B are incorrect: Selecting portfolios of acceptable risk activities and producing the highest returns at any given risk level are activities that are usually conducted by the management of the organization.

A is incorrect. Selecting portfolios of acceptable risk activities is typically a management function rather than a governance function. While the risk governance body establishes the overall risk appetite and framework, it is the responsibility of management to implement this framework by selecting and managing specific risk activities within the established parameters. This involves analyzing various risk factors and making decisions about which risks to accept, mitigate, or avoid in order to achieve the organization's strategic objectives.

B is incorrect. Producing the highest returns at any given risk level is a goal often associated with investment management and portfolio optimization, rather than with the risk governance body's activities. This objective involves identifying the optimal mix of investments that can deliver the best possible returns for a given level of risk, based on the principles of modern portfolio theory. While the risk governance body sets the overall risk appetite, it is up to the investment managers and the management team to apply this guidance in their investment decisions and operational activities to achieve the desired balance between risk and return.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (c): Define risk governance and describe elements of effective risk governance.

Q.2857 Which of the following is the most appropriate risk tolerance definition from the enterprise risk management perspective?

- A. Risk tolerance identifies the extent to which the enterprise is willing to lose money and incur opportunity costs.
- B. Risk tolerance provides the organization-wide risk metrics for identifying the risk tolerance level of the investors.
- C. Risk tolerance is defined as quantifying and allocating the tolerable risk using specific metrics.

The correct answer is **A**.

From the enterprise risk management perspective, risk tolerance identifies the extent to which the enterprise is willing to experience losses, incur opportunity costs, and fail to meet its financial objectives.

B is incorrect. This option implies that risk tolerance is primarily about providing organization-wide risk metrics for identifying the risk tolerance level of investors. While risk metrics are indeed a crucial part of understanding and quantifying risk tolerance, this definition is too narrow and investor-focused for the broader concept of enterprise risk management. Risk tolerance in an enterprise context is about the organization as a whole, including but not limited to investors. It involves a comprehensive assessment of the enterprise's willingness and capacity to take on risks across all areas of operation, not just those directly related to investment decisions.

C is incorrect. This option defines risk tolerance as quantifying and allocating tolerable risk using specific metrics. While quantification and allocation of risk are important aspects of managing risk tolerance, this definition misses the essence of risk tolerance as a concept that encompasses the enterprise's overall willingness to accept and manage risk in pursuit of its strategic objectives. Risk tolerance is not just about the technical aspects of quantification and allocation but also involves a broader understanding of the enterprise's risk appetite, strategic goals, and financial capacity to absorb risk.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (d): Explain how risk tolerance affects risk management.

Q.2859 Which of the following is *most appropriate* for controlling the risk management function of the organization?

- A. Head of the risk committee
- B. Head of the audit committee
- C. Chief Financial Officer (CFO)

The correct answer is A.

The Chief Risk Officer (CRO) and the Risk Management Committee are the most appropriate for handling the risk management functions of large organizations.

B is incorrect. The Chief Financial Officer (CFO) is responsible for the organization's financial health, including planning, implementing, managing, and running all the finance activities, such as business planning, budgeting, forecasting, and negotiations. While the CFO plays a significant role in managing financial risks and has a vested interest in the organization's overall risk management framework, the CFO's responsibilities are broader and more strategic in nature. Risk management is just one aspect of the CFO's role, and they may not be involved in the detailed, day-to-day activities of risk management. Furthermore, the CFO's focus on financial performance and strategy might limit their capacity to dedicate the necessary attention to the comprehensive management of all types of risks the organization faces.

C is incorrect. The Chief Financial Officer (CFO) is indeed a key figure in managing financial risks and has a significant role in the organization's strategic planning, which includes risk management considerations. However, the CFO's broad scope of responsibilities, which encompasses the entire financial health of the organization, means that the specific task of controlling the risk management function is more effectively handled by the Head of the Risk Committee. The Risk Committee is dedicated solely to risk management, allowing for a more focused and specialized approach to identifying, assessing, and mitigating risks across the organization.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (c): Define risk governance and describe elements of effective risk governance.

Q.2861 Which of the following is *least likely* a type of financial risk?

- A. Credit risk
- B. Solvency risk
- C. Liquidity risk

The correct answer is **B.**

The types of financial risks include: market risk, credit risk, and liquidity risk. Solvency risk is categorized as a non-financial risk.

A is incorrect. Credit risk is a fundamental type of financial risk. It refers to the risk that a borrower will default on any type of debt by failing to make the required payments. In the financial markets, this can relate to the risk inherent in lending money or extending credit. It is a critical risk for banks, financial institutions, and investors, making it a core component of financial risk management practices. Credit risk assessment and management are essential for maintaining the financial health and stability of lending institutions and for ensuring the integrity of the broader financial system.

C is incorrect. It cannot convert assets to cash quickly enough. This risk can affect both financial institutions and companies outside the financial sector. In the context of investments, liquidity risk is the risk that an investor will not be able to sell or liquidate an asset at or near its value due to a lack of buyers or an inefficient market. Managing liquidity risk is crucial for the ongoing solvency and operational capability of any financial entity or investment portfolio.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (b): Describe features of a risk management framework.

Q.2862 Which of the following risks arises from a change in interest rates?

- A. Credit risk
- B. Solvency risk
- C. Market risk

The correct answer is **C**.

Market risk arises from the movement in interest rates, stock prices, commodity prices, and exchange rates.

A is incorrect. Credit risk, also known as default risk, refers to the possibility that a borrower will be unable to make the required payments on their debt obligations. This type of risk is primarily associated with fixed-income securities, such as bonds. Credit risk is more concerned with the issuer's financial health and ability to meet its obligations rather than changes in the market conditions like interest rates. Therefore, while credit risk is a significant concern for investors in debt securities, it does not directly arise from changes in interest rates.

B is incorrect. Solvency risk pertains to the risk that a company will not be able to meet its long-term financial obligations. This risk is more related to the overall financial stability and viability of a company rather than the immediate market conditions. Solvency risk is influenced by a company's capital structure, liquidity, and operational efficiency. While changes in interest rates can affect a company's cost of borrowing and potentially its solvency, solvency risk itself does not directly arise from interest rate movements. Instead, it is more concerned with the broader financial health and sustainability of an entity.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (f): Identify financial and non-financial sources of risk and describe how they may interact.

Q.2863 Which of the following is the risk associated with an organization unable to meet its long-term financial commitments?

- A. Solvency risk
- B. Credit risk
- C. Liquidity risk

The correct answer is **A.**

Solvency risk is the risk associated with an organization's inability to meet its long-term financial commitments. This type of risk is crucial for investors, creditors, and other stakeholders as it directly impacts an organization's long-term viability and its ability to sustain operations over time. Solvency risk is concerned with an entity's overall financial health, specifically its ability to generate enough cash flow to meet both its short-term and long-term obligations, including paying off long-term debts, interest, and other fixed charges. An organization that is unable to manage its solvency risk effectively may face bankruptcy or liquidation in the long term. Therefore, assessing solvency risk involves evaluating the entity's capital structure, leverage ratios, and the sustainability of its business model.

B is incorrect. Credit risk refers to the possibility that a borrower will default on a financial obligation, such as a loan, by failing to make the required payments. This type of risk is primarily associated with lending activities and is a concern for financial institutions, investors, and any party that extends credit to another. Credit risk focuses on the borrower's ability to repay the principal and interest on debts in the short term, rather than the organization's overall long-term financial health. While related, credit risk is distinct from solvency risk, as the latter encompasses a broader assessment of an organization's capacity to meet all its financial commitments over the long term.

C is incorrect. Liquidity risk pertains to an organization's ability to meet its short-term financial obligations as they come due without incurring unacceptable losses. This type of risk arises when an entity cannot easily convert assets into cash or obtain additional funding without a significant cost. Liquidity risk is concerned with the immediacy of cash flows and the organization's ability to manage its cash and short-term liabilities efficiently. It is a critical aspect of financial management, especially for entities facing volatile cash flows or operating in markets with limited access to quick funding. Unlike solvency risk, which deals with long-term financial health, liquidity risk is focused on the short-term operational aspects of managing cash flows and obligations.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (b): Describe features of a risk management framework.

Q.2864 Which of the following is *most likely* an example of model risk?

- A. Assuming that the tails of the return distribution are fat when, in fact, they are flat
- B. Using standard deviation for measuring the risk of asymmetrically distributed returns
- C. Using VaR to measure the risk on government bonds

The correct answer is **B**.

Model risk uses standard deviation to measure risk when returns are asymmetrically distributed. In finance, model risk is the risk of loss resulting from using models to make decisions, initially and frequently in the context of valuing financial securities.

A is incorrect. Assuming that the tails of the return distribution are fat when, in fact, they are flat, describes a scenario of incorrect assumption about the distribution characteristics rather than an inherent flaw in the model itself. While this assumption can lead to incorrect risk assessments, it is more about the misjudgment of the distribution's properties than the application of a model that is unsuitable for the data's nature.

C is incorrect. Using Value at Risk (VaR) to measure the risk on government bonds is not inherently an example of model risk. VaR is a widely used risk measure that estimates the maximum loss a portfolio could face over a given period with a certain confidence level. While there are limitations and assumptions in the VaR model that could introduce model risk, especially in its ability to predict extreme events or its applicability to assets with non-linear risks, the use of VaR itself is not a direct example of model risk. The effectiveness of VaR depends on the accuracy of the model's assumptions and the data's characteristics. Therefore, the critical factor is whether the model's assumptions align with the reality of government bonds' return distributions, not the use of VaR per se.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (g): Describe methods for measuring and modifying risk exposures and factors to consider in choosing among the methods.

Q.2865 Which of the following statements appropriately describes the risk drivers?

- I. Risk drivers are factors that influence industries and economies.
- II. Risk drivers are customized frameworks for mitigating organizational risks.
- III. Risk drivers are statistical metrics that measure risk.

- A. Statement I only
- B. Statements I & II only
- C. Statements I, II & III

The correct answer is **A**.

Risk drivers are defined as fundamental factors that influence macro economies and industries.

B is incorrect. This option incorrectly suggests that risk drivers are merely statistical metrics used to measure risk. While statistical metrics are indeed used in the assessment of risk, they are not synonymous with risk drivers. Risk drivers are the underlying factors that cause changes in risk levels, whereas statistical metrics are tools used to quantify and analyze these changes. Metrics such as volatility, beta, and Value at Risk (VaR) are used to measure the impact of risk drivers on investments or portfolios, but they do not constitute the drivers themselves.

C is incorrect. This option inaccurately combines the concept of risk drivers with frameworks for mitigating organizational risks. While understanding risk drivers is essential for risk mitigation, the drivers themselves are not frameworks or strategies. Risk mitigation frameworks are developed based on an understanding of risk drivers and are aimed at managing the impact of these drivers on an organization. These frameworks may include risk management policies, contingency planning, and risk transfer strategies. However, the drivers are the underlying factors that these frameworks aim to address, not the frameworks themselves.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (f): Identify financial and non-financial sources of risk and describe how they may interact.

Q.2867 Which of the following metrics measures the sensitivity of a security's returns to the returns of the market portfolio?

- A. Delta
- B. Beta
- C. Gamma

The correct answer is **B**.

Beta is the metric that measures the sensitivity of a security's returns to the returns of the market portfolio.

A is incorrect. Delta measures the sensitivity of an option's theoretical value to a change in the price of the underlying asset. It is a ratio that compares the change in the price of an asset, usually a derivative, to the corresponding change in the price of its underlying asset. Delta is primarily used in the trading of options and is part of the Greeks, which are various measures used to assess different types of risk in option portfolios. While delta does measure sensitivity, it is specific to options and their underlying assets, not the sensitivity of a security's returns to the market portfolio.

C is incorrect. Gamma is another metric from the Greeks, which measures the rate of change in the delta of an option for a one-unit change in the price of the underlying asset. Essentially, gamma reflects the stability of an option's delta, providing insight into how the delta could change as the market price of the underlying asset changes. Like delta, gamma is specific to options trading and does not measure the sensitivity of a security's returns to the returns of the market portfolio. It is more concerned with the curvature of the value of an option relative to the underlying asset's price, rather than the broader market's influence on a security's returns.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (f): Identify financial and non-financial sources of risk and describe how they may interact.

Q.2868 Which of the following metrics measures the sensitivity of derivative prices to small changes in the value of the underlying asset?

- A. Beta
- B. Delta
- C. Vega

The correct answer is **B.**

Delta measures the sensitivity of derivative prices to small changes in the value of the underlying asset.

A is incorrect. Beta measures the sensitivity of a stock's returns relative to the returns of a market benchmark. It is a measure of systematic risk, indicating how much the price of a particular stock is expected to move in relation to market movements. While beta is a critical concept in portfolio management and capital asset pricing, it does not directly measure the sensitivity of derivative prices to changes in the value of the underlying asset, which is the specific focus of delta.

C is incorrect. Vega measures the sensitivity of a derivative's price to changes in the volatility of the underlying asset. It is an essential metric in options trading, as it helps traders understand how the price of an option is likely to change with fluctuations in market volatility. While vega is crucial for assessing the impact of volatility on derivatives, it does not directly address the sensitivity of derivative prices to small changes in the value of the underlying asset, which is the primary function of delta.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (f): Identify financial and non-financial sources of risk and describe how they may interact.

Q.2869 Which of the following risk metrics is considered a second-order risk metric?

- A. Delta
- B. Vega
- C. Gamma

The correct answer is C.

Gamma is considered a second-order risk metric because it measures the rate of change in an option's delta for a one-unit change in the price of the underlying asset. This characteristic makes Gamma a crucial metric in options trading and risk management, as it provides insights into the convexity of an option's value relative to the underlying asset's price. Unlike first-order risk metrics, which only consider linear relationships, second-order risk metrics like Gamma account for the curvature in the relationship between an option's price and the underlying asset's price, offering a more nuanced understanding of risk.

A is incorrect. Delta is a first-order risk metric that measures the sensitivity of an option's price to a one-unit change in the price of the underlying asset. It represents the expected change in the option's price for a small change in the underlying asset's price, assuming all other variables remain constant. Delta is crucial for understanding an option's directional risk but does not account for the curvature or the rate of change of Delta itself, which is why it is considered a first-order, not a second-order, risk metric.

B is incorrect. Vega is another first-order risk metric that measures the sensitivity of an option's price to a 1% change in the implied volatility of the underlying asset. It represents the expected change in the option's price for a small change in the implied volatility, assuming all other variables remain constant. Vega is essential for understanding how changes in market perceptions of volatility can affect an option's price. However, like Delta, Vega does not consider the rate of change of itself or the curvature in the relationship between the option's price and the underlying variable it measures (in this case, volatility), which is why it is classified as a first-order risk metric.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (g): Describe methods for measuring and modifying risk exposures and factors to consider in choosing among the methods.

Q.2870 Which of the following is the first-order risk measure of the change in the option price for a change in the volatility of the underlying asset?

- A. Gamma
- B. Rho
- C. Vega

The correct answer is **C**.

Vega is the risk metric that measures the change in the derivative's price relative to the change in the volatility of the underlying asset.

A is incorrect. Gamma measures the rate of change of an option's delta for a one-unit change in the price of the underlying asset. While Gamma is an important risk measure in options trading, it does not directly quantify the sensitivity of an option's price to changes in the volatility of the underlying asset. Instead, Gamma focuses on the curvature of the option's price as the underlying asset's price changes, making it a second-order risk measure rather than a first-order risk measure like Vega.

B is incorrect. Rho measures the sensitivity of an option's price to changes in the risk-free interest rate. Although Rho is a relevant risk metric for assessing how changes in interest rates may impact the price of an option, it does not address the option's price sensitivity to changes in the volatility of the underlying asset.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (g): Describe methods for measuring and modifying risk exposures and factors to consider in choosing among the methods.

Q.2871 An analyst has recently read a research paper developed at a renowned university which says that the prices of derivatives are also sensitive to the changes in interest rates. If the analyst is interested in measuring such changes, then the best metric he should use is:

- A. Rho.
- B. Gamma.
- C. Delta.

The correct answer is **A**.

Rho measures the expected change in an option's price per 1% change in interest rates. It tells us how much the price of an option should fall or rise in response to an increase or decrease in the risk-free rate of interest.

B is incorrect. Gamma measures the rate of change in an option's delta per \$1 change in the price of the underlying stock.

It tells us how much the option's delta should change as the price of the underlying stock or index increases or decreases.

C is incorrect. Delta is a measure of the degree to which an option is exposed to changes in the price of the underlying asset.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (d): Explain how risk tolerance affects risk management.

Q.2872 Which of the following metrics measures the sensitivity of fixed income instruments to changes in interest rates?

- A. Rho
- B. Vega
- C. Duration

The correct answer is C.

Duration measures the interest rate sensitivity of a fixed income instrument while Rho measures the interest rate sensitivity of derivatives.

A is incorrect. Rho is a measure used in options trading that assesses the sensitivity of an option's price to a change in interest rates. Specifically, it represents the change in the option's price for a one percentage point change in interest rates. While Rho does relate to interest rate sensitivity, it is applicable to derivatives, not fixed income instruments like bonds. Therefore, it does not accurately measure the interest rate sensitivity of fixed income instruments.

B is incorrect. Vega measures the sensitivity of an option's price to changes in the volatility of the underlying asset. It represents the change in the option's price for a 1% change in the implied volatility of the underlying asset. Vega is crucial for options traders as it helps them understand how the price of an option might change as market conditions (specifically, volatility) change. However, since Vega is related to volatility and not interest rates, it does not serve as a measure for the sensitivity of fixed income instruments to changes in interest rates.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (d): Explain how risk tolerance affects risk management.

Q.2873 Which of the following three elements are measured with the VaR risk metric?

- A. The amount at risk of the total portfolio, the time period to maturity and the probability of default
- B. The amount at risk, the time period and the probability
- C. The amount at risk, the time period and the sensitivity of price to the changes in volatility

The correct answer is **B**.

The three elements measured by the VaR are the amount at risk, the time period and the probability.

A is incorrect. It inaccurately includes the probability of default as one of the elements measured by VaR. While VaR does consider the amount at risk and the time period, it does not specifically measure the probability of default. Instead, VaR focuses on the overall probability of experiencing a certain level of loss, without distinguishing whether such loss is due to default or other market factors. The inclusion of the probability of default suggests a misunderstanding of what VaR measures, as VaR is concerned with the potential loss in value of a portfolio due to general market movements and not solely due to default events.

C is incorrect. It mistakenly includes the sensitivity of price to changes in volatility as one of the elements measured by VaR. While sensitivity to volatility is an important concept in finance, particularly in the context of options pricing and the Greeks, it is not a component of VaR. VaR is concerned with quantifying the maximum expected loss over a specified time period at a certain confidence level, without directly measuring how price sensitivity to volatility affects this potential loss. The inclusion of price sensitivity to volatility confuses the purpose and calculation of VaR, which does not directly assess the impact of volatility changes on the portfolio's value. In summary, VaR is a tool used to estimate the potential loss in a portfolio over a given time period with a specified confidence level, focusing on the amount at risk, the time period, and the probability of experiencing such loss.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (b): Describe features of a risk management framework.

Q.2874 Which of the following is the most appropriate explanation for risk transfers and risk shifting?

- A. Risk transfer refers to actions that change the distribution of risk outcomes whereas risk shifting refers to actions taken that pass on risk to other parties.
- B. Examples of risk transfers include derivatives and examples of risk shifting include insurances.
- C. Risk shifting refers to actions that change the distribution of risk outcomes whereas risk transfer refers to actions taken that pass on risk to other parties.

The correct answer is **C**.

Risk shifting refers to actions that change the distribution of risk outcomes and risk transfer refers to actions taken that pass on risk to other parties. Examples of risk shifting include derivatives and examples of risk transfers include insurances.

A is incorrect. This option inaccurately defines risk transfer and risk shifting by reversing their meanings. It suggests that risk transfer changes the distribution of risk outcomes and risk shifting involves passing on risk to other parties, which is the opposite of their actual definitions.

B is incorrect. Insurance is a classic example of risk transfer, not risk shifting. It involves a contractual agreement where one party (the insurer) agrees to compensate another (the insured) in the event of a loss, thereby transferring the financial risk from the insured to the insurer. Misclassifying insurance as a form of risk shifting overlooks the fundamental principle of risk transfer inherent in insurance contracts.

CFA Level I, Portfolio Management, Learning Module 6: Introduction to Risk Management. LOS (b): Describe features of a risk management framework.
