Question #1 of 80

Question ID: 1530994

A risk consultant specializing in operational risks has been assigned to review a draft report on operational risks that was prepared by a bank's risk management department (to be used as a training tool in the future for new employees of the department). While reviewing the draft report, the consultant comes across a list of statements. Which of the following statements regarding operational risk should the consultant include in the final report?

A) Operational risks are often uncorrelated with each other.

B) Operational risks often materialize in the form of a large number of small losses. ✓

C) Operational risks can be fully eliminated with sufficient avoidance, hedging, or insurance.

D) Operational risks are a set of risks with fairly similar and predictable causes, implications, and loss distributions.

Explanation

For most event types, operational risk often materializes in a large number of small losses or a small number of large losses (much larger than the median of the distribution).

Despite heterogeneity, the different types of operational risk are partially correlated because some of them have common internal causes (e.g., control weaknesses, human error). Even for the most conservative and risk-averse firms, it is not possible to fully eliminate operational risk. Operational risk is a set of eclectic risks, with differing causes, implications, and loss distributions. Even within a risk category, operational risk events can be very different.

(Book 3, Module 35.2, LO 35.c)

Question #2 of 80

Question ID: 1531035

A U.S. bank anticipates that climate risk events will increase both in frequency and in magnitude in the future. In response, the bank has decided to: (1) lend at longer loan maturities to corporations and (2) increase its Tier 1 capital ratio by 1%. The bank's actions to protect against climate risks are appropriate with respect to:

A) lending at longer loan maturities only.

B) increasing its Tier 1 capital ratio only. ✓

C) both lending at longer loan maturities and increasing its Tier 1 capital ratio.

D) neither lending at longer loan maturities nor increasing its Tier 1 capital ratio.

Explanation

The bank's actions are only appropriate with respect to capital ratios. The bank can reduce its exposure to climate risk events and transition risk drivers by lending at *shorter* loan maturities to corporates (to limit credit risk) and by improving its capital position, including actions that lead to increased capital ratios.

(Book 5, Module 91.1, LO 91.d)

Question #3 of 80

Question ID: 1531032

The due diligence process for assessing investment managers should include information on the investment background and reputation of the managers and past performance. In addition, there should be an assessment of the fund's investment process, risk controls, operations, and business model. Which of the following statements regarding due diligence on potential fund investments is most accurate?

A) The due diligence approach should not be altered based on the fund strategy.

B) The track record of the manager, rather than the fund, should be carefully scrutinized.

C) A checklist approach should be used rather than asking open-ended questions to managers and associated parties.

D) An investor must assess the skills of a fund's management team with regard to investing, operations, and business model.

Explanation

During the due diligence process, an investor must assess the skills of a fund's management team with regard to investing, operations, and business model. In this process, a checklist approach combined with open-ended questions is the best approach. The track records of the manager and the fund should be carefully scrutinized. The due diligence approach should be customized based on the stated strategy of the fund.

(Book 5, Module 87.1, LO 87.b)

Question #4 of 80

Question ID: 1268621

A risk manager uses a mean reversion model to estimate changes in correlations over time. Suppose that in November the average monthly correlation for all Dow Jones Industrial Average (DJIA) stocks was 25% and that the long-run mean correlation of DJIA stocks is 27%. The risk manager gathers current and historical stock prices, S, and runs a regression where $S_t - S_{t-1}$ (i.e., the dependent variable) is regressed with respect to S_{t-1} (i.e., the independent variable). The regression output estimates the following regression relationship: $Y = 0.153 - 0.63X$. What is the expected correlation for December given the mean reversion rate estimated in the regression analysis?

A) 23.7%.

B) 25.7%.

C) 26.3%.

D) 28.3%.

Explanation

To estimate the rate of mean reversion, a regression model is run where $S_t - S_{t-1}$ (*Y* variable) is regressed with respect to S_{t-1} (*X* variable). In the regression equation, the β coefficient is equal to the negative of the mean reversion rate. Here, the beta coefficient of −0.63 implies a mean reversion rate of 63%. If there is a decrease from the mean correlation for one month, the following month is expected to have an increase in correlation that is 63% of the difference. There is a 2% difference between the November correlation and the long-run mean correlation (i.e., 27% − 25% = 2%). The December correlation is expected to revert 63% of this difference back toward the mean. Thus, the expected correlation for December is 26.3% (0.25 + 0.63 × 0.02 = 0.263).

(Book 1, Module 8.1, LO 8.b)

Question #5 of 80

Question ID: 1530992

A portfolio manager manages a long portfolio of debt and equity investments for an insurance company and has been trying to implement a new risk management program based on estimating and reporting the daily value at risk (VaR) for each manager's portfolio. He is writing a report to gain support for his proposal. If the manager determines that daily VaR (10%) for his portfolio is equal to $20,000, which of the following statements should he include in his report?

A) Computationally, delta-normal VaR is more complex than standard deviation but easier to interpret from a risk management perspective.

B) VaR was developed specifically for the purpose of measuring the economic capital required to protect bank portfolios against losses.

C) The risk of losing more than $20,000 in portfolio value in any given week is 10%.

D) Portfolio diversification is not fully accounted for using the VaR methodology.

Explanation

VaR was developed as a way for banks to track the economic capital requirements while taking into account the effects of diversification on the risk of the portfolio. Delta-normal VaR is computationally simpler than portfolio standard deviation. In addition, VaR (unlike beta) does not rely on a theoretical relationship with the overall market. The correct interpretation of daily VaR (10%) is that there is a 10% chance that on any given day, the portfolio will lose more than $20,000 in value.

(Book 1, Module 6.1, LO 6.f)

Question #6 of 80

Question ID: 1530998

A risk manager presents an operational risk heatmap that shows the counts of individual risks grouped by likelihood and severity. The likelihood categories ranked from highest to lowest include near certain, likely, possible, unlikely, and rare. The severity categories ranked from highest to lowest include severe, major, moderate, minor, and insignificant. Given the limited resources that the company has available to address risks, which of the following combinations will the risk manager most likely recommend for resource allocation?

	Likelihood	Severity
A)	Possible	Moderate
B)	Near Certain	Minor
C)	Unlikely	Severe
D)	Likely	Major ✓

Explanation

The operational risk heatmap is a visual representation of risks identified and categorized based on their likelihood of occurrence and their severity if they do occur. With limited resources, a company will want to focus on the risks with the combination of highest likelihood and severity. Risks with near certain likelihood and severe impacts would be the top priority, with the next tier being the near certain/major and likely/severe risks. The tier after that would include near certain/moderate, likely/major, and possible/severe. Of the choices given, the highest priority combination for resource allocation is the likely/major combination.

(Book 3, Module 40.2, LO 40.b)

Question #7 of 80

Question ID: 1531028

How many of the following statements regarding risk budgeting are correct?

I. Tracking error is defined as the standard deviation of the difference between the returns on a portfolio and the benchmark portfolio.
II. Using only information ratios allows risk of entire (firm) portfolios to be budgeted (allocated) across various portfolios managed by separate managers.
III. The optimal weights of the allocations to various fund managers (of a firm) do not necessarily have to sum to one.
IV. The benchmark portfolio cannot be assigned any weight under the optimal allocation scheme across active fund managers of a firm.

A) One statement is correct.
B) Two statements are correct. ✓
C) Three statements are correct.
D) Four statements are correct.

Explanation

Optimal allocation is not only dependent on information ratios but also on the tracking errors. So Statement II is incorrect. Statement III is correct; any difference (in case of less than 100% optimal allocation) can be assigned to the benchmark portfolio. Therefore, Statement IV is incorrect. Tracking error is defined as the standard deviation of the difference between the returns on a portfolio and the benchmark portfolio.

(Book 5, Module 83.2, LO 83.h)

Question #8 of 80

Question ID: 1531014

Ludington Bank and Trust expects to make $200 million new loans in the coming quarter. The bank also expects to invest $10 million in Treasury bonds and $15 million in mortgage-backed securities. It expects current loan customers to draw down an additional $20 million on revolving credit lines. The bank expects to retire 10 ATMs during the period. The machines will likely be sold at auction for less than they are carried on the balance sheet. Ludington Bank will also break ground on two new branches, each expected to cost approximately $15 million. The bank expects new deposits to be $175 million in the coming quarter. The available funds gap (AFG) for the coming quarter is closest to:

A) $25 million.

B) $70 million. 

C) $225 million.

D) $245 million.

Explanation

The AFG is the difference between the current and projected inflows and outflows of bank funds. If deposits are insufficient to cover loan demand, security purchases, and customer deposit withdrawals, the institution will borrow the difference in the markets described previously.

The AFG is as follows:

> current and projected loans and other investments – current and expected deposit inflows and other available funds

The AFG = ($200 million new loans + $10 million Treasury security purchases + $15 million mortgage-backed securities purchase + $20 million revolving credit line drawdowns) – $175 million new deposits = $70 million.

The funding gap is unrelated to the retirement of ATMs. It is also unrelated to the investment in new branches, as they are capital investments and not intended to be funded with deposits.

(Book 4, Module 71.1, LO 71.b)

Question #9 of 80

Question ID: 1268631

According to the Merton model, if the firm's debt has a face value of $60 and the value of the firm is $50 when the debt matures, what are the payoffs to the debtholders and to the shareholders?

	Payoff to Debtholders	Payoff to Shareholders
A)	$50	$0 ✓
B)	$50	$10
C)	$10	$0
D)	$10	$10

Explanation

The payment to debtholders = $D_M - \max(D_M - V_M, 0) = 60 - \max(60 - 50, 0) = \$50$

The payment to the firm's stockholders = $\max(V_M - D_M, 0) = \max(50 - 60, 0) = \$0$

At maturity of the debt, if the value of the firm's assets is less than the value of the firm's debt, then the firm goes into default.

(Book 2, Module 21.1, LO 21.a)

Question #10 of 80

Question ID: 1531031

Historical data on hedge fund performance was difficult to obtain prior to the early 1990s. In early 1994, hedge fund databases were developed so that participants could better obtain and analyze hedge fund performance. Which of the following statements best describes hedge fund performance during the 2001–2010 time period?

A) All three hedge fund databases slightly underperformed equities but with a smaller standard deviation range compared to equities.

B) All three hedge fund databases substantially outperformed equities; however, their range of standard deviation was nearly double that of equities.

C) Hedge fund performance suffered following the Long-Term Capital Management (LTCM) hedge fund collapse.

D) All three hedge fund databases substantially outperformed equities, accompanied by less than half the standard deviation of equities. ✓

Explanation

The hedge fund databases reported cumulative performance ranging from 38.18% to 72.64%, compared with the S&P 500 index return of 13.5%. The hedge fund databases showed standard deviations which ranged from 5.51% to 6.47%, compared to a standard deviation of 16% for equities.

(Book 5, Module 86.1, LO 86.c)

Question #11 of 80

Question ID: 1268615

Suppose you are using the volatility-weighted historical simulation approach to estimate value at risk (VaR) and expected shortfall (ES) for asset Y. The actual return for the asset 30 days ago was 1.5% with a daily volatility estimate of 1.0%. What is the volatility-adjusted return if the current daily volatility is 1.4%?

A) 0.9%.

B) 1.6%.

C) 1.8%.

D) 2.1%.

Explanation

The historical return is adjusted based on the ratio of current daily volatility to historically observed daily volatility 30 days ago. The volatility-adjusted return is calculated as follows:

$$r^{*}_{t,i} = \left(\frac{\sigma_{T,i}}{\sigma_{t,i}}\right) r_{t,i} = \left(\frac{0.014}{0.01}\right) 0.015 = 0.021 = 2.1\%$$

Once the volatility-adjusted return is computed, VaR, ES, and any other coherent risk measure can be calculated in the usual way after substituting historical returns with volatility-adjusted returns.

(Book 1, Module 2.1, LO 2.c)

Question #12 of 80

Question ID: 1357835

Specific methods are often used in structuring the securitization process of issuing notes to meet specific needs of investors. Which of the following statements most accurately describes a method used in structuring the securitization process?

A) The credit quality on the highest-rated tranche is enhanced by overcollateralization.

B) The first-loss piece or equity piece is the class of assets with the highest credit quality, and, therefore, the originator often maintains ownership of this tranche.

C) Under the cash waterfall process of securitization, a third party is often hired to run tests to ensure cash flows are sufficient to pay all senior tranches prior to making payments to junior tranches.

D) The master trust is a special type of structure that is used for infrequent issuers who demand unique one-time offerings.

Explanation

The *cash waterfall* process of securitization specifies the order in which payments from the asset pool are paid to investors, and a third party is often hired to run tests to ensure cash flows are sufficient to pay all outstanding liabilities. The *lowest* class of notes are often *overcollateralized* by issuing notes with a principal value that is less than the principal value of the original underlying assets purchased from the originator. The *first-loss* piece is the class of assets with the *lowest* credit quality. The master trust is a special type of structure that is used for frequent issuers.

(Book 2, Module 33.2, LO 33.b)

Question #13 of 80

Question ID: 1531004

Risk aggregation is one of the challenging areas within the economic capital implementation framework. Risk aggregation involves identifying the individual risk types and making certain choices in aggregating those risk types. Classification by risk types (market, credit, operational, and business) may be approximate and prone to error. For example, the definitions of risk types may differ across banks or within a given bank, which complicates the aggregation process. Most banks begin by aggregating risk into silos by risk-type across the entire bank. Other banks prefer using business unit silos, while others combine both approaches. Which of the following statements regarding risk aggregation is correct?

A) Combining two portfolios, for risk aggregation across different portfolios or business units of a bank, will result in lower risk per investment unit in the combined portfolio versus the weighted average of the two separate portfolios.

B) A simple summation method of risk aggregation adds together individual capital components, differentiates between risk types, and produces unequal weighting.

C) A variance-covariance matrix risk aggregation method summarizes the interdependencies across risk types and provides a flexible framework for recognizing diversification benefits.

D) A full modeling/simulation method of risk aggregation combines marginal probability distributions into a joint probability distribution through copula functions.

Explanation

The variance-covariance matrix summarizes the interdependencies across risk types and provides a flexible framework for recognizing diversification benefits.

(Book 3, Module 53.1, LO 53.a)

Question #14 of 80

Question ID: 1531009

An analyst with Platinum Consultants is analyzing the economic effects of buying stock with borrowed funds for a high net worth individual client. Assume that the client has $200 cash invested (i.e., no borrowed funds) and then uses the cash to purchase stock. The client then decides to use 50% borrowed funds to purchase stock on margin. After the margin transaction, the total assets on the full economic balance sheet and the leverage ratio are closest to:

	Total Assets	Leverage Ratio
A)	$200	1.0
B)	$300	1.5

C) $300 2.0

D) $400 2.0

Explanation

Initial Balance Sheet:

Assets		Liabilities and Equity	
Cash	$200	Debt	$0
Stock	$0	Equity	$200
Total assets	$200	TL and OE	$200

Leverage ratio = 1.0 or $200 / $200

Next, the client uses 50% borrowed funds and invests 50% equity (i.e., haircut = 50%) to buy shares of stock. Immediately following the trade, the margin account balance sheet has 50% equity and a $100 margin loan from the broker. That is:

Assets		Liabilities and Equity	
		Margin Loan	$100
Stock	$200	Equity	$100
Total assets	$200	TL and OE	$200

The full economic balance sheet as a result of the borrowed funds (remember, the client put in $200 of equity initially so the firm now has $200 of stock and $100 cash) is:

Assets		Liabilities and Equity	
Cash	$100	Margin Loan	$100
Stock	$200	Equity	$200
Total assets	$300	TL and OE	$300

Thus, the leverage ratio has increased to 1.5 (i.e., $300 / $200).

(Book 4, Module 60.3, LO 60.e)

Question #15 of 80

Question ID: 1531040

A risk consultant is interested in the potential applications of central bank digital currencies (CBDCs) as well as their advantages and disadvantages compared to traditional payment systems. Which of the following statements is correct with respect to the features of CBDCs?

A) CBDCs are considered legal tender.

B) Even if CBDCs had depositor insurance, counterparty risk would still exist.

C) Similar to bank accounts, CBDCs typically have deposit insurance coverage.

D) CBDCs are typically not designed to allow individuals and firms to transact directly in the CBDC.

Explanation

CBDCs are considered legal tender, while bank deposits are considered *claims* to legal tender.

CBDCs could be designed to eliminate the need to collateralize with securities, therefore reducing/eliminating counterparty risk. Unlike bank accounts in many countries, CBDCs currently do not benefit from (federal) deposit insurance coverage. CBDCs are designed to allow for both wholesale transactions and for transactions between individuals and firms.

(Book 5, Module 95.2, LO 95.d)

Question #16 of 80

Question ID: 1531036

The board of directors of a mid-sized bank engaged a third-party company to assess the bank's operational resilience and its ability to deliver critical operations even in the face of disruptions. The assessment noted several deficiencies, including a lack of adequate controls to assess threats and vulnerabilities, as well as a lack of sufficiently robust disaster recovery framework. These deficiencies most likely address which of the following principles of the bank's operational resilience?

	Lack of adequate controls	Lack of robust disaster recovery
A)	Operational risk management	Business continuity planning and testing ✓
B)	Governance	Operational risk management
C)	Incident management	Information and communication technology
D)	Business continuity planning and testing	Governance

Explanation

There are seven principles of a bank's operational resilience. *Operational risk management* looks at the risks and threats to deliver critical operations, including establishing adequate procedures and controls to assess threats and vulnerabilities. *Business continuity planning and testing* looks at establishing robust, forward-looking plans to assess risks and vulnerabilities, including incorporating a disaster recovery framework.

(Book 5, Module 91.1, LO 91.d)

Question #17 of 80

Question ID: 1268613

Mill Street Bank has accumulated a long history of loan returns. Mill Street believes that the underlying distribution of loan returns should follow a normal distribution with a mean of 10 and a standard deviation of three. The following table identifies tail VaRs at different confidence levels. Assume the initial analysis uses five tail slices. Calculate the expected shortfall at the 95% confidence level and identify the effect on ES when the number of tail slices increases.

Confidence Level	Tail VaR
95%	3.00
96%	3.25
97%	3.60
98%	4.00
99%	4.75

	Expected Shortfall	Increasing Slices
A)	3.72	ES increases
B)	3.72	ES decreases
C)	3.90	ES increases
D)	3.90	ES decreases

Explanation

The expected shortfall calculation takes the average of the expected shortfalls at varying confidences in the tail region. Since we are told that there are only five tail slices, there will be four (i.e., n − 1) VaR quantiles. Therefore, ES = [(3.25 + 3.6 + 4.00 + 4.75) / (5 − 1)] = 3.90. Note that the tail VaR at 95% is not included in the calculation since ES is the average loss beyond 5% VaR. In addition, as the number of tail slices increases, the average ES will increase as the number of higher confidence tail VaRs increases.

(Book 1, Module 1.2, LO 1.c)

Question #18 of 80

Question ID: 1531027

A portfolio manager with Quantum Funds is constructing an equally weighted, two-asset portfolio. Asset returns are normally distributed. The manager would like to limit the portfolio VaR to $45 million at the 95% confidence level. He will invest $200 million in each asset. Given the following information, determine which two-asset portfolio allows the manager to remain within the proposed risk budget.

Asset	Standard Deviation	Correlation
Asset A	10%	Correlation of A with B = 0.6
Asset B	9%	Correlation of B with C = −0.4
Asset C	11%	Correlation of C with A = 0

A) Portfolio AB.

B) Portfolio AC.

C) Portfolio BC.

D) All three potential portfolios exceed Hemme's risk budget.

Explanation

Standard deviation of returns for Portfolio AB =

$$[(0.5)^2(10)^2 + (0.5)^2(9)^2 + (2 \times 0.5 \times 0.5 \times 10 \times 9 \times 0.6)]^{1/2} = 8.50\%$$

$$VaR_{AB} = 1.65 \times 0.085 \times \$400 = \$56.1 \text{ million}$$

Standard deviation of returns for Portfolio AC =

$$[(0.5)^2(10)^2 + (0.5)^2(11)^2 + (2 \times 0.5 \times 0.5 \times 10 \times 11 \times 0.0)]^{1/2} = 7.43\%$$

$$VaR_{AC} = 1.65 \times 0.0743 \times \$400 = \$49.04 \text{ million}$$

Standard deviation of returns for Portfolio BC =

$$[(0.5)^2(9)^2 + (0.5)^2(11)^2 + (2 \times 0.5 \times 0.5 \times 9 \times 11 \times -0.4)]^{1/2} = 5.54\%$$

$$VaR_{BC} = 1.65 \times 0.0554 \times \$400 = \$36.56 \text{ million}$$

Based on a limit of $45 million, Portfolio BC remains in the manager's risk limit. The portfolio standard deviation is lower for Portfolio BC because the correlation coefficient is negative, reducing the VaR.

(Book 5, Module 83.1, LO 83.e)

Question #19 of 80

Question ID: 1531019