**Module F: Decision-Making Tools**

**Test Bank**

**Multiple Choice**

1. Which of the following statements is FALSE about systematic decision-making process?

a. The strategic decision-making process is used to make strategic long-term decisions.

b. Using a systematic approach guarantees that the decision will be the “right” one.

c. The strategic decision- making process is used to make short-term decisions.

d. The strategic decision-making process consists of various steps.

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-1. Explain the importance of following a systematic process to make operations and supply chain management decisions

Answer Location: Using a Systematic Decision-Making Process

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

2. The systematic decision-making process that operations and supply chain managers rely on consists of \_\_\_\_\_\_ steps:

a. five

b. six

c. seven

d. eight

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-1. Explain the importance of following a systematic process to make operations and supply chain management decisions

Answer Location: Using a Systematic Decision-Making Process

Difficulty Level: Easy

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3. Which of the following is FALSE about the steps involved in a systematic decision-making process?

a. Define the problem or challenge as clearly and concisely as possible.

b. Determine the best decision-making tool to use.

c. Generate a limited list of possible solutions.

d. Evaluate each alternative solution.

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-1. Explain the importance of following a systematic process to make operations and supply chain management decisions

Answer Location: Using a Systematic Decision-Making Process

Difficulty Level: Easy

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4. *Weigh the cost and time related to selecting and implementing each alternative.* This statement applies to which of the following steps involved in a systematic decision-making process?

a. Define the problem or challenge as clearly and concisely as possible.

b. Determine the best decision-making tool to use.

c. Evaluate each alternative solution.

d. Monitor the results.

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-1. Explain the importance of following a systematic process to make operations and supply chain management decisions

Answer Location: Using a Systematic Decision-Making Process

Difficulty Level: Easy

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5. *Evaluate the results to determine if the desired objectives were achieved in the established timeframe.* This statement applies to which of the following steps involved in a systematic decision-making process?

a. Define the problem or challenge as clearly and concisely as possible.

b. Determine the best decision-making tool to use.

c. Evaluate each alternative solution.

d. Monitor the results.

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-1. Explain the importance of following a systematic process to make operations and supply chain management decisions

Answer Location: Using a Systematic Decision-Making Process

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

6. *Reduce the defect rate of a manufacturing process by 5% over the next 6 months*. This example is an illustration of which of the following steps involved in a systematic decision-making process?

a. Define the specific and measurable objectives the decision needs to accomplish.

b. Determine the best decision-making tool to use.

c. Evaluate each alternative solution.

d. Monitor the results.

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-1. Explain the importance of following a systematic process to make operations and supply chain management decisions

Answer Location: Using a Systematic Decision-Making Process

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

7. Any decision-making situation is comprised of \_\_\_\_\_\_ elements.

a. three

b. four

c. five

d. six

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Elements in the Decision-Making Process

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

8. The actions decision-makers can take to address or solve the problem are referred to as \_\_\_\_\_\_.

a. consequences

b. states of nature

c. payoffs

d. decision alternatives

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Elements in the Decision-Making Process

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

9. The outcomes that result given the actual decision made and the state of nature that occurs are referred to as \_\_\_\_\_\_.

a. consequences

b. states of nature

c. payoffs

d. decision alternatives

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Elements in the Decision-Making Process

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

10. The values the decision-maker places on each combination of actual decisions and states of nature are referred to as \_\_\_\_\_\_.

a. consequences

b. states of nature

c. payoffs

d. decision alternatives

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Elements in the Decision-Making Process

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

11. \_\_\_\_\_\_ are future events or occurrences that can take place that are beyond the control of the decision maker.

a. Consequences

b. States of nature

c. Payoffs

d. Decision alternatives

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Elements in the Decision-Making Process

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

12. Consider that you are getting ready to leave outside in the morning, and weather forecasters predict rain. Whether or not it will rain is an illustration of \_\_\_\_\_\_.

a. consequences

b. states of nature

c. payoffs

d. decision alternatives

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Elements in the Decision-Making Process

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

13. Consider that you are getting ready to leave outside in the morning, and weather forecasters predict rain. You getting wet or staying dry and being burdened with carrying a raincoat or not are all examples of \_\_\_\_\_\_.

a. consequences

b. states of nature

c. payoffs

d. decision alternatives

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Elements in the Decision-Making Process

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

14. Consider that you are getting ready to leave outside in the morning, and weather forecasters predict rain. If you decide to take your raincoat and it rains, which of the following is the corresponding payoff?

a. There is no cost for dry cleaning your suit, but you were burdened by carrying the raincoat.

b. There is no cost for dry cleaning your suit, and you were not burdened by carrying the raincoat.

c. There is a cost for dry cleaning your suit, and you were burdened by carrying the raincoat.

d. There is a cost for dry cleaning your suit, but you were not burdened by carrying the raincoat.

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Elements in the Decision-Making Process

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

15. Depending on the degree of certainty about the states of nature, every decision-making situation can be classified into \_\_\_\_\_\_ categories.

a. three

b. four

c. five

d. six

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Categorizing Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

16. The classification of decision-making situations is based on \_\_\_\_\_\_ about the states of nature

a. degree of uncertainty

b. frequency of occurrence

c. time of occurrence

d. length of occurrence

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Categorizing Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

17. Decisions are made when the state of nature is known under which of the following scenarios?

a. decisions under certainty

b. decisions under uncertainty

c. decisions under state of nature

d. decisions under risk

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Categorizing Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

18. Decisions are made when there are not only multiple states of nature, but they are also unpredictable and the decision maker cannot even make an educated guess about the chances, or probabilities, of their coming. This statement relates to which of the following scenarios?

a. decisions under certainty

b. decisions under uncertainty

c. decisions under state of nature

d. decisions under risk

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Categorizing Decisions

Difficulty Level: Easy

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19. The decision maker—although not certain—is aware of the chances, or probabilities, of the various states of nature occurring. This statement relates to which of the following scenarios?

a. decision under certainty

b. decision under uncertainty

c. decision under state of nature

d. decision under risk

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Categorizing Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

20. A company’s decision to introduce a new product into the market is an example of \_\_\_\_\_\_.

a. decision under certainty

b. decision under uncertainty

c. decision under state of nature

d. decision under risk

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Categorizing Decisions

Difficulty Level: Easy

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21. A company is planning to build a new facility in a foreign country, and the success or failure of this venture depends on the demand for the products produced at the facility. It estimates that there is a 70% probability of high demand for the products and a 30% probability of low demand. This is an example of \_\_\_\_\_\_.

a. decision under certainty

b. decision under uncertainty

c. decision under state of nature

d. decision under risk

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Categorizing Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

22. Which of the following is a decision-making approach a person uses when the negative impact of making the wrong decision is so high that he or she chooses that alternative that guarantees at least the minimum payoff?

a. maximax criterion

b. Laplace criterion

c. maximin criterion

d. minimax regret criterion

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

23. Which of the following is a decision-making approach that attempts to minimize the regret, or loss, associated with making a nonoptimal decision?

a. maximax criterion

b. Laplace criterion

c. maximin criterion

d. minimax regret criterion

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

24. Which of the following is a decision-making approach used when the decision maker is optimistic about the future events and their outcomes, identifies the maximum payoff associated with each decision, and chooses the maximum of the maximum payoffs?

a. maximax criterion

b. Laplace criterion

c. maximin criterion

d. minimax regret criterion

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

25. Which of the following is a decision-making approach used when the probabilities of the states of nature are unknown, assumed as equal, and the different decision alternatives should be evaluated using the expected value of their payoffs?

a. maximax criterion

b. Laplace criterion

c. maximin criterion

d. Hurwicz criterion

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

26. Which of the following is a decision-making approach that attempts to find a compromise between the two extremes posed by the pessimistic maximin criterion and the optimistic maximax criterion by applying a certain percentage weight (α) to the most optimistic outcome, and (1-α) to the most pessimistic outcome.

a. maximax criterion

b. Laplace criterion

c. maximin criterion

d. Hurwicz criterion

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

27. \_\_\_\_\_\_ is the weighted average of the values of all possible outcomes of the decision, or the average payoff that would be realized if the decision were to be repeated many times.

a. Expected value of perfect information

b. Expected regret

c. Expected loss

d. Expected value

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

28. \_\_\_\_\_\_ is the difference between the expected value of the decision with perfect information and the expected value of the decision without perfect information.

a. Expected value of perfect information

b. Expected regret

c. Expected loss

d. Expected value

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

29. \_\_\_\_\_\_ is the expected value of regret associated with each decision.

a. Expected value of perfect information

b. Expected regret

c. Expected loss

d. Expected value

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

30. ABC operates a factory in the United Kingdom. Because the company’s existing factory doesn’t have the capacity to meet the future demands, it is considering various options. Consider the payoff matrix that shows the payoff for each combination of decision and state of nature. Determine the best alternative, given that the demand will be low.



a. Expand current facility.

b. Build small factory.

c. Build large factory.

d. Determine a new alternative.

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

31. ABC operates a factory in the United Kingdom. Because the company’s existing factory doesn’t have the capacity to meet the future demands, it is considering various options. Consider the payoff matrix that shows the payoff for each combination of decision and state of nature. Determine the best alternative, given that the demand will be high.



a. Expand current facility

b. Build small factory

c. Build large factory

d. Determine a new alternative

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

32. Laplace criterion is an approach to solving problems under which of the following conditions?

a. decision-making under certainty

b. decision-making under uncertainty

c. decision-making under risk

d. decision-making under regret

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

33. If the payoffs are in monetary terms, the expected value of the payoffs is often referred to as \_\_\_\_\_\_.

a. expected profit value (EPV)

b. expected loss value (ELV)

c. expected returns value (ERV)

d. expected monetary value (EMV)

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

34. ABC operates a factory in the United Kingdom. Because the company’s existing factory doesn’t have the capacity to meet the future demands, it is considering various options. Consider the payoff matrix that shows the payoff for each combination of decision and state of nature. Determine the best alternative using the Laplace criterion solution. Assume equal likelihood for low demand and high demand.



a. Expand current facility.

b. Build small factory.

c. Build large factory.

d. Determine a new alternative.

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

35. ABC operates a factory in the United Kingdom. Because the company’s existing factory doesn’t have the capacity to meet the future demands, it is considering various options. Consider the payoff matrix that shows the payoff for each combination of decision and state of nature. Determine the best alternative using the maximin criterion.



a. Expand current facility.

b. Build small factory.

c. Build large factory.

d. Determine a new alternative.

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

36. ABC operates a factory in the United Kingdom. Because the company’s existing factory doesn’t have the capacity to meet the future demands, it is considering various options. Consider the payoff matrix that shows the payoff for each combination of decision and state of nature. Determine the best alternative using the maximax criterion.



a. Expand current facility.

b. Build small factory.

c. Build large factory.

d. Determine a new alternative.

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

37. In Hurwicz criterion, the coefficient α is often called the \_\_\_\_\_\_.

a. coefficient of realism

b. coefficient of pessimism

c. coefficient of payoff

d. coefficient of regret

Ans: A

Cognitive Domain: Knowledge (Remember)

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Difficulty Level: Easy

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38. In Hurwicz criterion, coefficient α’s mirror image (1-α) is called the \_\_\_\_\_\_.

a. coefficient of realism

b. coefficient of pessimism

c. coefficient of payoff

d. coefficient of regret

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

39. In the Hurwicz equation, Hi = α x (maximum payoff) + (1-α) x (minimum payoff); if we set α = 1, then the equation reduces to \_\_\_\_\_\_.

a. maximin criterion

b. maximax criterion

c. Laplace criterion

d. minimax regret criterion

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

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40. In the Hurwicz equation, Hi = α x (maximum payoff) + (1-α) x (minimum payoff); if we set α = 0, then the equation reduces to \_\_\_\_\_\_.

a. maximin criterion

b. maximax criterion

c. Laplace criterion

d. minimax regret criterion

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

41. ABC operates a factory in the United Kingdom. Because the company’s existing factory doesn’t have the capacity to meet the future demands, it is considering various options. Consider the payoff matrix that shows the payoff for each combination of decision and state of nature. Determine the best alternative using the Hurwicz criterion. Assume α = 0.7.



a. Expand current facility.

b. Build small factory.

c. Build large factory.

d. Determine a new alternative.

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

42. \_\_\_\_\_\_ is the difference between the best payoff for a given state of nature and the payoff associated with the actual decision made for that particular state of nature.

a. Profit

b. Loss

c. Returns

d. Regret

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

43. Costs, losses, and expenditures are examples of \_\_\_\_\_\_.

a. positive-flow payoffs

b. negative-flow payoffs

c. optimized-flow payoffs

d. reduced-flow payoffs

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

44. Revenues, profits, and income are examples of \_\_\_\_\_\_.

a. positive-flow payoffs

b. negative-flow payoffs

c. optimized-flow payoffs

d. reduced-flow payoffs

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

45. ABC operates a factory in the United Kingdom. Because the company’s existing factory doesn’t have the capacity to meet the future demands, it is considering various options. Consider the payoff matrix that shows the payoff for each combination of decision and state of nature. Determine the best alternative using the minimax regret criterion.



a. Expand current facility.

b. Build small factory.

c. Build large factory.

d. Determine a new alternative.

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

46. Which of the following is a drawback of the maximin criterion?

a. It ignores the payoffs associated with the “high demand” state of nature.

b. It ignores the payoffs associated with the “low demand” state of nature.

c. It is not a good method to use when the states of nature are not equally probable.

d. It ignores the maximum payoff that could be realized if the decision maker were a risk taker.

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

47. Which of the following is a drawback of the maximax criterion?

a. It ignores the payoffs associated with the “high demand” state of nature.

b. It ignores the payoffs associated with the “low demand” state of nature.

c. It is not a good method to use when the states of nature are not equally probable.

d. It ignores the maximum payoff that could be realized if the decision maker were a risk taker.

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

48. Which of the following is a drawback of the Laplace criterion?

a. It ignores the payoffs associated with the “high demand” state of nature.

b. It ignores the payoffs associated with the “low demand” state of nature.

c. It is not a good method to use when the states of nature are not equally probable.

d. It ignores the maximum payoff that could be realized if the decision maker were a risk taker and the probabilities associated with the possible state of nature.

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

49. Which of the following is a drawback of the minimax regret criterion?

a. It ignores the payoffs associated with the “high demand” state of nature.

b. It ignores the payoffs associated with the “low demand” state of nature.

c. It is not a good method to use when the states of nature are not equally probable.

d. It ignores the maximum payoff that could be realized if the decision maker were a risk taker and the probabilities associated with the possible state of nature.

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

50. Which of the following statements is FALSE about minimax regret criterion?

a. It is superior to use the maximax, maximin, and Hurwicz criteria.

b. It includes more relevant problem information.

c. It leads to more informed decision-making.

d. It uses all the information available in the payoff matrix.

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

51. \_\_\_\_\_\_ is the potential that a decision made will lead to undesirable outcomes.

a. Risk

b. Failure

c. Regret

d. Success

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

52. The risk of making the wrong decision is higher when the degree of uncertainty is \_\_\_\_\_\_.

a. high

b. low

c. constant

d. zero

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

53. Mutually exhaustive events are events that \_\_\_\_\_\_.

a. can occur at the same time

b. cannot occur at the same time

c. occur one after the other

d. occur with equal probabilities

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

54. In a single toss of a coin, the events *heads* and *tails* are \_\_\_\_\_\_

a. mutually exclusive

b. collectively exhaustive

c. dependent

d. mutually exclusive and collectively exhaustive

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

55. XYZ is a paint product manufacturer, and one of the plants is experiencing a substantial increase in demand. The future demand for the products could be low, medium, or high, with probabilities estimated to be 25%, 50%, and 30%, respectively. The company wants to determine the financial impact associated with the three decision alternatives under the varying levels of demand. Given the following payoff matrix, the firm’s manager should \_\_\_\_\_\_.



a. subcontract additional capacity.

b. build a new plant.

c. do nothing.

d. expand the plant.

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

56. XYZ is a paint product manufacturer, and one of the plants is experiencing a substantial increase in demand. The future demand for the products could be low, medium, or high, with probabilities estimated to be 25%, 50%, and 30%, respectively. The company wants to determine the financial impact associated with the three decision alternatives under the varying levels of demand. Given the following payoff matrix, compute the expected value of decisions with perfect information.



a. $45.5 M

b. $53M

c. $12.4 M

d. $70 M

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

57. XYZ is a paint product manufacturer, and one of the plants is experiencing a substantial increase in demand. The future demand for the products could be low, medium, or high, with probabilities estimated to be 25%, 50%, and 30%, respectively. The company wants to determine the financial impact associated with the three decision alternatives under the varying levels of demand. Given the following payoff matrix, compute the EVPI.



a. $9.5 M

b. $10 M

c. $12.4 M

d. $7 M

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

58. Which of the following statement is FALSE about the expected value approach to make decisions under risk?

a. It assumes that the decision maker is rational and will choose the optimum decision with the highest expected value.

b. It ignores the elements other than monetary profits.

c. It takes irrational factors into consideration.

d. It ignores factors such as quality of life or the current monetary status of the decision maker.

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

59. Which of the following is a technique used for making sequential decisions that allow the decision maker to visually map each possible decision alternative to determine the best decision?

a. decision tree

b. sensitivity analysis

c. sequential analysis

d. decision priority

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Sequential Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

60. Which of the following is an analysis a decision maker conducts to determine how sensitive a decision alternative is to change in the probability values of nature?

a. decision tree

b. sensitivity analysis

c. sequential analysis

d. decision priority

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Sequential Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

61. A decision tree is drawn from \_\_\_\_\_\_.

a. top to bottom

b. right to left

c. left to right

d. bottom to top

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Sequential Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

62. After drawing a decision tree, it is analyzed from \_\_\_\_\_\_.

a. top to bottom

b. right to left

c. left to right

d. bottom to top

Ans: B

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Sequential Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

63. In a decision tree, branches from a square node represent \_\_\_\_\_\_.

a. decision alternatives

b. uncertain event whose occurrence cannot be predicted

c. the state of nature

d. consequences

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Sequential Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

64. In a decision tree, branches from a circle node represent \_\_\_\_\_\_.

a. decision alternatives

b. uncertain event

c. state of nature

d. consequences

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Sequential Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

65. In a decision tree, a square node represents a \_\_\_\_\_\_.

a. decision point

b. state of nature

c. consequence

d. payoff

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Sequential Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

66. In a decision tree, a circle node represents a(n) \_\_\_\_\_\_.

a. independent event

b. dependent event

c. predictable event

d. chance event

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Sequential Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

67. Which of the following is FALSE about constructing and analyzing decision trees?

a. Begin the tree with initial decision to be made.

b. Expand the tree.

c. Evaluate the tree without further expanding it.

d. Analyze the tree and make a decision.

Ans: C

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Sequential Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

68. Using a payoff matrix to compute the expected values of a decision is appropriate as long as \_\_\_\_\_\_ decision(s) is/are to be made at a given point in time.

a. two

b. three

c. multiple

d. one

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Sequential Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

69. In decision trees, the decision tree criterion is to choose the initial decision that has \_\_\_\_\_\_.

a. highest expected value

b. highest risk

c. highest probability of occurrence

d. lowest risk

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Sequential Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

70. Sensitivity analysis involves constructing a graph and then using simple algebra to determine the range of probability values when there are \_\_\_\_\_\_ states of nature.

a. two

b. three

c. four

d. five

Ans: A

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-3. Appraise the different environments, or categories, under which decisions are made.

Answer Location: Techniques for Making Sequential Decisions

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

71. XYZ is a paint product manufacturer, and one of the plants is experiencing a substantial increase in demand. The future demand for the products could be low, medium, or high, with probabilities estimated to be 25%, 50%, and 30%, respectively. The company wants to determine the financial impact associated with the three decision alternatives under the varying levels of demand. Given the following payoff matrix, compute the expected regret for the option of subcontracting additional capacity.



a. $10.6 M

b. $21.5 M

c. $9.5 M

d. $14 M

Ans: A

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

72. XYZ is a paint product manufacturer, and one of the plants is experiencing a substantial increase in demand. The future demand for the products could be low, medium, or high, with probabilities estimated to be 25%, 50%, and 30%, respectively. The company wants to determine the financial impact associated with the three decision alternatives under the varying levels of demand. Given the following payoff matrix, determine which option has the lowest expected regret. The company should \_\_\_\_\_\_.



a. subcontract additional facility.

b. build a new plant.

c. do nothing.

d. choose a new alternative

Ans: C

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

73. XYZ is a paint product manufacturer, and one of the plants is experiencing a substantial increase in demand. The future demand for the products could be low, medium, or high, with probabilities estimated to be 25%, 50%, and 30%, respectively. The company wants to determine the financial impact associated with the three decision alternatives under the varying levels of demand. Given the following payoff matrix, compute the expected regret for the option of building a new plant.



a. $10.6 M

b. $21.5 M

c. $9.5 M

d. $14 M

Ans: B

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

74. XYZ is a paint product manufacturer, and one of the plants is experiencing a substantial increase in demand. The future demand for the products could be low, medium, or high, with probabilities estimated to be 25%, 50%, and 30%, respectively. The company wants to determine the financial impact associated with the three decision alternatives under the varying levels of demand. Given the following payoff matrix, determine the EV for the option of building a new plant.



a. $ 42.4 M

b. $31.5 M

c. $43.5 M

d. $23.5 M

Ans: B

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Certainty, Uncertainty, and Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

75. ABC operates a factory in the United Kingdom. Because the company’s existing factory doesn’t have the capacity to meet the future demands, it is considering various options. Consider the payoff matrix that shows the payoff for each combination of decision and state of nature. Determine the best maximum payoff for low demand.



a. $4 M

b. $3 M

c. $5 M

d. $10 M

Ans: A

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

76. Which of the following is NOT one of the elements in the decision-making process?

a. consequences

b. states of nature

c. payoffs

d. cost of decision

Ans: D

Cognitive Domain: Knowledge (Remember)

Learning Objective: F-2. Define the elements in the decision-making process.

Answer Location: Elements in the Decision-Making Process

Difficulty Level: Easy

AACSB: Systems and processes in organizations, including planning and design, production/operations, supply chains, marketing, and distribution

**Use the following data to answer questions 77-87.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Expected Demand for Acme Widgets** | | |
| *Decision Alternative* | *Low 40%* | *Medium 30%* | *High 30%* |
| Outsource | $8.00 million | $40.00 million | $70.00 million |
| Build capacity | -$28.00 million | $20.00 million | $110.00 million |
| Do nothing | $15.00 million | $30.00 million | $85.00 million |

77. Refer to the data on Expected Demand for Acme Widgets. For the various demand scenarios and their associated probabilities, which of the three decision alternatives has the maximum expected value?

a. Outsource, with an expected value of $20.95 million

b. Build capacity, with an expected value of $23.70 million

c. Do nothing, with an expected value of $40.50 million

d. Outsource, with an expected value of $31.60 million

Ans: C

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

78. Refer to the data on Expected Demand for Acme Widgets. For the various demand scenarios and their associated probabilities, the option to build has an expected value of \_\_\_\_\_\_.

a. $27.80 million

b. $31.40 million

c. $41.60 million

d. $52.55 million

Ans: A

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

79. Refer to the data on Expected Demand for Acme Widgets. For the various demand scenarios and their associated probabilities, the option to outsource has an expected value of \_\_\_\_\_\_.

a. $21.58 million

b. $39.56 million

c. $36.20 million

d. $51.55 million

Ans: C

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

80. Refer to the data on Expected Demand for Acme Widgets. For the various demand scenarios and their associated probabilities, the option to do nothing has an expected value of \_\_\_\_\_\_.

a. $21.52 million

b. $40.50 million

c. $34.22 million

d. $65.58 million

Ans: B

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

81. Refer to the data on Expected Demand for Acme Widgets. If the company has information that demand is going to be high, what is the option that the company should choose?

a. Build capacity

b. Do nothing

c. Outsource

d. either Build capacity or Do nothing

Ans: A

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

82. Refer to the data on Expected Demand for Acme Widgets. If the company has information that demand is going to be low, what is the option that the company should choose?

a. Build capacity

b. Do nothing

c. Outsource

d. either Do nothing or Outsource

Ans: B

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

83. Refer to the data on Expected Demand for Acme Widgets. Based on the Hurwicz criterion, what is the payoff for the “outsource” option if you used the coefficient of realism of 0.6?

a. $45.20 million

b. $16.44 million

c. $57.00 million

d. $33.42 million

Ans: A

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

84. Refer to the data on Expected Demand for Acme Widgets. For the various demand scenarios, if you applied the Laplace criterion, which option gives the highest payoff?

a. Outsource

b. Build capacity

c. Do nothing

d. either Do nothing or Outsource

Ans: C

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

85. Refer to the data on Expected Demand for Acme Widgets. For the various demand scenarios, if you applied the Laplace criterion, what is the highest payoff?

a. $39.33 million

b. $23.33 million

c. $31.33 million

d. $43.33 million

Ans: D

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

86. Refer to the data on Expected Demand for Acme Widgets. Based on the Hurwicz criterion, what is the payoff for the “build capacity” option if you used the coefficient of realism of 0.6?

a. $54.80 million

b. $16.44 million

c. $32.65 million

d. $33.42 million

Ans: A

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

87. Refer to the data on Expected Demand for Acme Widgets. Based on the Hurwicz criterion, what is the payoff for the “do nothing” option if you used the coefficient of realism of 0.6?

a. $45.20 million

b. $16.44 million

c. $57.00 million

d. $33.42 million

Ans: C

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

**Use the following data to answer questions 88-100.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Expected Demand for Weston Gadgets, Inc.** | | | |
| *Decision Alternative* | *Low 35%* | *Medium 30%* | *High 35%* |
| Outsource | $16.00 million | $28.00 million | $66.00 million |
| Build capacity | $4.00 million | $32.00 million | $26.00 million |
| Do nothing | $9.00 million | $18.00 million | $66.00 million |

88. Refer to the data on Expected Demand for Weston Gadgets, Inc. For the various demand scenarios and their associated probabilities, which of the following decision alternatives has the maximum expected value?

a. Build capacity

b. Do nothing

c. Outsource

d. either Do nothing or Outsource

Ans: C

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

89. Refer to the data on Expected Demand for Weston Gadgets, Inc. For the various demand scenarios and their associated probabilities, what is the maximum expected value?

a. $37.10 million

b. $26.71 million

c. $32.55 million

d. $17.85 million

Ans: A

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

90. Refer to the data on Expected Demand for Weston Gadgets, Inc. For the various demand scenarios and their associated probabilities, the option to build has an expected value of \_\_\_\_\_\_.

a. $37.10 million

b. $26.71 million

c. $20.10 million

d. $17.85 million

Ans: C

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

91. Refer to the data on Expected Demand for Weston Gadgets, Inc. For the various demand scenarios and their associated probabilities, the option to do nothing has an expected value of \_\_\_\_\_\_.

a. $37.10 million

b. $31.65 million

c. $20.10 million

d. $17.85 million

Ans: B

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

92. Refer to the data on Expected Demand for Weston Gadgets, Inc. For the various demand scenarios and their associated probabilities, the option to outsource has an expected value of \_\_\_\_\_\_.

a. $37.10 million

b. $31.65 million

c. $20.10 million

d. $17.85 million

Ans: A

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

93. Refer to the data on Expected Demand for Weston Gadgets, Inc. For the various demand scenarios, if you applied the Laplace criterion, what is the lowest payoff?

a. $39.33 million

b. $34.00 million

c. $31.33 million

d. $43.33 million

Ans: B

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

94. Refer to the data on Expected Demand for Weston Gadgets, Inc. Based on the Hurwicz criterion, which of the following options would you choose if you used the coefficient of realism of 0.6?

a. Outsource

b. Build capacity

c. Do nothing

d. either Outsource or Do nothing

Ans: A

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

95. Refer to the data on Expected Demand for Weston Gadgets, Inc. Based on the Hurwicz criterion, what is the payoff for the option to outsource if you used the coefficient of realism of 0.6?

a. $46.00 million

b. $20.80 million

c. $43.20 million

d. $33.20 million

Ans: A

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

96. Refer to the data on Expected Demand for Weston Gadgets, Inc. Based on the Hurwicz criterion, what is the payoff for the option to do nothing if you used the coefficient of realism of 0.6?

a. $46.00 million

b. $20.80 million

c. $43.20 million

d. $33.20 million

Ans: C

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

97. Refer to the data on Expected Demand for Weston Gadgets, Inc. Based on the Hurwicz criterion, what is the payoff for the option to build if you used the coefficient of realism of 0.6?

a. $46.00 million

b. $20.80 million

c. $43.20 million

d. $33.20 million

Ans: B

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

98. Refer to the data on Expected Demand for Weston Gadgets, Inc. For the various demand scenarios, if you applied the Laplace criterion, what is the lowest payoff?

a. $46.00 million

b. $20.67 million

c. $43.20 million

d. $33.20 million

Ans: B

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

99. Refer to the data on Expected Demand for Weston Gadgets, Inc. For the various demand scenarios, if you applied the Laplace criterion, what is the highest payoff?

a. $36.67 million

b. $32.17 million

c. $33.20 million

d. $41.55 million

Ans: A

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)

100. Refer to the data on Expected Demand for Weston Gadgets, Inc. For the various demand scenarios, if you applied the Laplace criterion, what is the payoff for the “build capacity” option?

a. $36.67 million

b. $20.67 million

c. $33.20 million

d. $41.55 million

Ans: B

Cognitive Domain: Application (Apply)

Learning Objective: F-4. Solve decision-making problems under certainty, uncertainty, and risk.

Answer Location: Techniques for Making Decisions Under Risk

Difficulty Level: Medium

AACSB: Application of knowledge (able to translate knowledge of business and management into practice)