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Exam : **Data Driven Decision Making**

Title : VPC2Data-Driven Decision Making C207

Version : DEMO

1.What classifies analytics as descriptive, predictive, or prescriptive?
A. The sample size and analysis technique used
B. The data validity and reliability
C. The purpose and methods
D. The kind of software used for the analysis
Answer: C
Explanation:
Analytics is classified as descriptive, predictive, or prescriptive based on the purpose of the analysis and the methods used to carry it out, which is a foundational concept in data-driven decision making. The distinction reflects the type of managerial question being addressed rather than technical aspects such as software tools, sample size, or data reliability.
Descriptive analytics focuses on understanding what has happened by summarizing historical data. It relies on descriptive statistics, reports, dashboards, and data visualizations to provide insights into past performance. Predictive analytics extends this approach to determine what is likely to happen by using statistical models, probability distributions, regression analysis, and forecasting techniques to estimate future outcomes. Prescriptive analytics goes further by identifying what should be done to achieve desired results. It uses optimization models, decision trees, simulations, and scenario analysis to recommend the best course of action under given constraints.
In data-driven decision making, the classification of analytics depends on how results are intended to support decisions and the analytical techniques applied to achieve that goal. Factors such as data quality and software influence accuracy and efficiency but do not define the analytics category itself. Therefore, the correct classification criterion is the purpose and methods, making option C the correct answer.

2.How do analytics help an organization?
A. They use data to persuade consumers.
B. They assist with investment management.
C. They develop fact-based strategies.
D. They increase employees' use of information systems.
Answer: C
Explanation:
Analytics help organizations primarily by enabling the development of fact-based strategies, which is a central principle of data-driven decision making. Rather than relying on intuition, assumptions, or anecdotal evidence, analytics allows organizations to systematically analyze data to understand performance, identify opportunities, manage risks, and support strategic decisions.
Through descriptive analytics, organizations gain insight into historical performance and operational efficiency. Predictive analytics enables them to anticipate future trends, customer behavior, and potential outcomes. Prescriptive analytics further supports decision-making by recommending optimal actions under various constraints. Together, these approaches transform raw data into actionable insights that guide strategic planning and execution.
While analytics may support investment management, marketing, or information systems usage, these are specific applications, not the fundamental organizational benefit. Analytics is not primarily used to persuade consumers, nor is its main objective to increase system usage among employees. Instead, its value lies in improving decision quality by grounding strategies in empirical evidence.

In data-driven decision-making frameworks, analytics serves as a structured approach to aligning data, models, and business objectives. By developing strategies based on verified data and analytical methods, organizations reduce uncertainty, improve performance, and gain competitive advantage. Therefore, the correct answer is C, as analytics enable organizations to develop fact-based strategies.

3.Which type of analytics classification uses experimental design and optimization to suggest a course of action?
A. Predictive analytics
B. Descriptive analytics
C. Prescriptive analytics
D. Diagnostic analytics
Answer: C
Explanation:
Prescriptive analytics is the analytics classification that uses experimental design and optimization techniques to suggest a specific course of action. In data-driven decision making, prescriptive analytics represents the most advanced stage of analytics, as it not only predicts outcomes but also recommends decisions that lead to optimal results.
Descriptive analytics summarizes historical data to explain what has already happened, while predictive analytics uses statistical and probabilistic models to estimate what is likely to happen in the future. Diagnostic analytics focuses on understanding why something happened by identifying root causes. In contrast, prescriptive analytics answers the critical question: what should be done.
Prescriptive analytics relies on methods such as optimization models, simulation, decision trees, and experimental design. These techniques evaluate multiple scenarios, constraints, and objectives to identify the best possible action.
For example, organizations use prescriptive analytics to optimize pricing, allocate resources efficiently, schedule operations, or determine optimal investment strategies.
Within data-driven decision-making frameworks, prescriptive analytics bridges analysis and action by directly supporting managerial decision-making. It transforms analytical insights into concrete recommendations that can be implemented to improve performance and outcomes.
Therefore, the correct answer is C, as prescriptive analytics explicitly uses experimental design and optimization to suggest a course of action.

4.Amusement Park W is in California. Amusement Park X is in Texas. A survey asks 1,000 people living in California if they prefer Amusement Park W or X.
Which problem exists with this survey?
A. Information bias
B. Random error
C. Systematic error
D. Measurement bias
Answer: C
Explanation:
The primary problem with this survey is systematic error, which occurs when the data collection process consistently favors certain outcomes due to flawed design. In data-driven decision making, systematic error arises when a sampling method introduces bias that skews results in a predictable direction.

In this scenario, surveying only people living in California creates a location-based bias. Respondents are far more likely to prefer Amusement Park W because it is geographically closer, more familiar, and more accessible than Amusement Park X in Texas. This bias does not occur randomly; instead, it systematically influences responses toward one option, making the results unreliable for comparing overall preferences between the two parks.
Random error would involve unpredictable variation, which is not the issue here. Measurement bias relates to how questions are asked or measured, and information bias concerns inaccurate or misleading data reporting. The core issue is the non-representative sample, which violates the principle of unbiased data collection.
Data-driven decision making emphasizes that valid conclusions require representative samples. Because the survey design inherently favors one outcome, the results cannot be generalized, making systematic error the correct answer.

5.What are two benefits of good data quality management in improving business decision-making? Choose 2 answers.
A. It ensures there are no missing data points.
B. It guarantees that a sample will be statistically significant.
C. It begins the statistical process faster.
D. It mitigates undetected errors from the data-entry process.
Answer: A,D
Explanation:
Good data quality management plays a critical role in improving business decision-making by ensuring that data is accurate, complete, and reliable. One key benefit is that it ensures there are no missing data points, which helps maintain data completeness. Missing data can distort results, reduce analytical power, and lead to incorrect conclusions, especially in descriptive and inferential statistics.
Another important benefit is that data quality management mitigates undetected errors from the data-entry process. Errors such as duplicate entries, incorrect values, or inconsistent formats can significantly bias analysis if left unnoticed. Through validation checks, cleaning procedures, and governance standards, organizations reduce the risk of flawed insights.
While good data quality supports better analysis, it does not guarantee statistical significance, as significance depends on sample size, variability, and study design. Similarly, it does not necessarily make the statistical process faster; in fact, data cleaning can be time-consuming. However, it improves the accuracy and trustworthiness of outcomes.
In data-driven decision making, high-quality data is essential because decisions are only as good as the data used to support them.
Therefore, the correct answers are A and D.