Business Intelligence Analytics Data Science and AI 5th edition Sharda Test Bank

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Business Intelligence, Analytics, Data Science, and AI, 5e **(Sharda)**
Chapter 1 An Overview of Business Intelligence, Analytics, and Data Science

1) Computerized support is used for organizational and managerial decisions that are responses to external pressures and to take advantage of market opportunities.
Answer: TRUE
Diff: 1 Page Ref: 2

2) During the early days of analytics, data was often obtained from the domain experts using manual processes to build mathematical or knowledge-based models.
Answer: TRUE
Diff: 2 Page Ref: 26

3) Computer applications have moved from transaction processing and monitoring activities to problem analysis and decision support applications.
Answer: TRUE
Diff: 1 Page Ref: 18

4) Business intelligence is a specific term that describes a variety of information technology and data capturing focused system architectures.
Answer: FALSE
Diff: 2 Page Ref: 16

5) The growth in hardware, software, and network capacities were the core contributors to the proliferation of decision support and analytics systems.
Answer: FALSE
Diff: 2 Page Ref: 18

6) Managing data warehouses requires special methods, including parallel and cloud computing along with Hadoop/Spark.
Answer: TRUE
Diff: 2 Page Ref: 19

7) Managing information on operations, customers, internal procedures, and employee interactions is the domain of cognitive science.
Answer: FALSE
Diff: 3 Page Ref: 19

8) Decision support system (DSS), analytics, and management information system (MIS) have precise definitions agreed to by most practitioners.
Answer: FALSE
Diff: 2 Page Ref: 25

9) Of all analytics types (i.e., descriptive, predictive, and prescriptive), data mining is most closely related to predictive analytics.
Answer: TRUE
Diff: 1 Page Ref: 35

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10) Major commercial business intelligence (BI) products and services were well established in the early 1970s.
Answer: FALSE
Diff: 2 Page Ref: 25

11) Information systems that support such transactions as ATM withdrawals, bank deposits, and cash register scans at the grocery store represent online transaction processing systems (OLAP).
Answer: FALSE
Diff: 3 Page Ref: 31

12) Many business users in the 1980s referred to their mainframes as "the black hole," because all the information went into it, but little ever came back, and ad hoc real-time querying was virtually impossible.
Answer: TRUE
Diff: 2 Page Ref: 31

13) Data warehouses are intended to work with informational data used for online transaction processing (OLTP) systems.
Answer: TRUE
Diff: 2 Page Ref: 31

14) Successful BI is a tool developed by and developed for the information systems department.
Answer: FALSE
Diff: 2 Page Ref: 31

15) The time between new paradigm shifts in information systems and particularly in analytics has been getting longer.
Answer: FALSE
Diff: 2 Page Ref: 27

16) Traditional BI systems use a large volume of static data that has been extracted, cleansed, and loaded into a data warehouse to produce reports and analyses.
Answer: TRUE
Diff: 2 Page Ref: 32

17) Demands for instant, on-demand access to dispersed information decrease as firms successfully integrate BI into their operations.
Answer: FALSE
Diff: 3 Page Ref: 21

18) Simon's decision process involves three major phases: intelligence, design, and choice.
Answer: TRUE
Diff: 1 Page Ref: 20

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19) The use of dashboards and data visualizations is often very effective in identifying issues and opportunities in organizations.
Answer: TRUE
Diff: 2 Page Ref: 36

20) The use of statistics in baseball by the Oakland Athletics, as described in the *Moneyball* case study, is an example of the effectiveness of data analytics.
Answer: TRUE
Diff: 2 Page Ref: 3

21) The intelligence phase of the decision process involves developing a model that represents the underlying system.
Answer: FALSE
Diff: 2 Page Ref: 20

22) The goal of prescriptive analytics is to use data and machine learning tools to forecast the future values of the variables of interest.
Answer: FALSE
Diff: 2 Page Ref: 36

23) Descriptive analytics is often called reporting analytics with the goal of answering the question of "what happened."
Answer: FALSE
Diff: 1 Page Ref: 42

24) In the design phase of the human decision process, the problem or opportunity is defined based on all available data and information.
Answer: FALSE
Diff: 2 Page Ref: 21

25) Business analytics continuum starts with predictive analytics, continues with descriptive analytics and ends with prescriptive analytics.
Answer: FALSE
Diff: 2 Page Ref: 25

26) In the Opening Vignette on Sports Analytics, what was adjusted to drive one-time ticket sales?
A) Player selections
B) Stadium location
C) Fan tweets
D) Ticket prices
Answer: D
Diff: 2 Page Ref: 5

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27) In the Opening Vignette on Sports Analytics, what type of modeling was used to predict offensive tactics?
A) Heuristics
B) Heat maps
C) Cascaded decision trees
D) Sentiment analysis
Answer: B
Diff: 3 Page Ref: 8-10

28) Computer applications have moved from transaction processing and monitoring to other activities. Which of the following is not one of those activities?
A) Problem analysis
B) Solution applications
C) Data monitoring
D) Cloud-based technologies
Answer: C
Diff: 3 Page Ref: 18

29) Which of the following developments is not contributing to facilitating growth of decision support and analytics?
A) Collaboration technologies
B) Data management
C) Knowledge management
D) Locally concentrated workforces
Answer: D
Diff: 3 Page Ref: 18-19

30) In what decade did separate information systems within the organizations begin to be integrated?
A) 1970s
B) 1980s
C) 1990s
D) 2000s
Answer: B
Diff: 2 Page Ref: 25

31) Relational databases began to be used in which of the following time windows?
A) 1960s
B) 1970s
C) 1980s
D) 1990s
Answer: C
Diff: 3 Page Ref: 25-26

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32) To address the need for more versatile reporting than what was available in 1980s era, ERP led to the development of what type of system?
A) Management information systems
B) Relational databases
C) Executive information systems
D) Data warehouses
Answer: C
Diff: 3 Page Ref: 26

33) Which of the following is an umbrella term that combines architectures, tools, databases, analytical tools, applications, and methodologies?
A) MIS
B) DSS
C) ERP
D) BI
Answer: D
Diff: 2 Page Ref: 28

34) The competitive imperatives for BI include all of the following, except?
A) Right information
B) Right user
C) Right time
D) Right place
Answer: B
Diff: 2 Page Ref: 30

35) Which of the following is not an example of transaction processing?
A) ATM withdrawal
B) Bank deposit
C) Sales report
D) Cash register scans
Answer: C
Diff: 3 Page Ref: 31

36) Online transaction processing (OLTP) systems handle a company's routine ongoing business. In contrast, a data warehouse is typically used as _____.
A) The end result of BI processes and operations
B) A repository of actionable intelligence obtained from a data mart
C) A distinct system that provides storage for data that will be made use of in analysis
D) An integral subsystem of an online business transaction recording system
Answer: C
Diff: 3 Page Ref: 31-32

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37) The very design that makes an OLTP system efficient for transaction processing makes it inefficient for what?
A) End-user generated ad hoc reports, queries, and analysis
B) Transaction processing systems that constantly update operational databases
C) The collection of reliable sources of intelligence
D) Transactions such as ATM withdrawals and updating of the account balance
Answer: A
Diff: 2 Page Ref: 31

38) How are enterprise resources planning (ERP) systems related to supply chain management systems?
A) Different terms for the same system
B) Complementary systems
C) Mutually exclusive systems
D) None of the above; these systems never interface
Answer: B
Diff: 2 Page Ref: 31

39) Which of the following is not among the systems with which BI applications are not usually integrated?
A) Databases
B) Legacy systems
C) Enterprise systems
D) Deep learning systems
Answer: D
Diff: 2 Page Ref: 34

40) What has caused the growth of the demand for instant, on-demand access to dispersed information?
A) The increasing divide between users who focus on the strategic level and those who are more oriented to the tactical level
B) The need to create a database infrastructure that is always online and contains all the information from the OLTP systems
C) The more pressing need to close the gap between the operational data and strategic objectives
D) The fact that BI cannot simply be a technical exercise for the information systems department
Answer: C
Diff: 3 Page Ref: 32

41) Today, many vendors offer diverse tools, some of which are completely preprogrammed (called shells). How are these shells utilized?
A) They are used for customization of BI solutions
B) All a user needs to do is insert the information and data
C) The shell provides a secure environment for the organization's BI data
D) They host an enterprise data warehouse that can assist in decision making
Answer: B
Diff: 2 Page Ref: 33

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42) What type of analytics is used to make decisions to achieve the best performance possible?
A) Descriptive
B) Prescriptive
C) Predictive
D) Domain
Answer: B
Diff: 2 Page Ref: 36-37

43) What type of analytics seeks to determine what is likely to happen in the future?
A) Descriptive
B) Prescriptive
C) Predictive
D) Domain
Answer: C
Diff: 2 Page Ref: 35

44) Which one of the following technologies is not directly related to Big Data?
A) Spark
B) Hadoop
C) MapReduce
D) OLAP
Answer: D
Diff: 2 Page Ref: 37

45) Which of the following is not a phase in human decision-making process?
A) Intelligence
B) Design
C) Analytics
D) Choice
Answer: C
Diff: 2 Page Ref: 20-22

46) Which of the following is a part of the design phase of the human decision-making process?
A) Formulate a model
B) Search and scan the procedures
C) Collect data
D) Identify the problem
Answer: C
Diff: 2 Page Ref: 21

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47) Which of the following is not among the data collection issues in the decision-making process?
A) Obtaining data may be expensive
B) Data may be highly structured
C) Data may be insecure
D) Data may not be accurate or precise enough
Answer: B
Diff: 2 Page Ref: 22

48) Which one of the following is the best definition of a model?
A) Model is the exact replica of the reality
B) Model is the opposite of reality
C) Model is the abstraction of reality
D) Model is the reality
Answer: C
Diff: 2 Page Ref: 23

49) Which one of the following technologies was developed after the business intelligence era?
A) Big data analytics
B) Enterprise resource planning
C) Relational database management systems
D) Data warehousing
Answer: A
Diff: 2 Page Ref: 25

50) Which one of the following technologies was developed prior to the business intelligence era?
A) All of the other answers are true
B) Enterprise resource planning
C) Relational database management systems
D) Data warehousing
Answer: A
Diff: 2 Page Ref: 25

51) Which one of the following is not among the data engineering challenges?
A) No real-time access
B) High volumes of data
C) Lack of data governance
D) No clear boundaries in the data flows
Answer: B
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52) Fundamental reasons for investing in BI must be _____ with the company's business strategy.
A) Preceded
B) Contradicted
C) Competed
D) Aligned
Answer: D
Diff: 2 Page Ref: 31

53) Software instances referred to as _____ can be placed on a separate server in the network and use event- and process-based approaches to measure and monitor operational processes.
A) Subroutines
B) Processors
C) CPUs
D) Intelligent agents
Answer: D
Diff: 2 Page Ref: 33

54) Organizations using BI systems are typically seeking to close the _____ between the operational data and strategic objectives has become more pressing.
A) Contract
B) Deal
C) Gap
D) Agents
Answer: C
Diff: 2 Page Ref: 32

55) _____ is an umbrella term that combines architectures, tools, databases, analytical tools, applications, and methodologies.
A) ERP
B) Business intelligence
C) Prescriptive analytics
D) Social media
Answer: B
Diff: 2 Page Ref: 28

56) A(n) _____ is a major component of a Business Intelligence system that holds source data.
A) ERP
B) OLTP
C) Software agent
D) Data warehouse
Answer: D
Diff: 1 Page Ref: 29

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57) A(n) _____ is a major component of a Business Intelligence system that is often browser based and often presents a portal or dashboard.
A) Data warehouse
B) OLTP
C) User interface
D) ERP
Answer: C
Diff: 1 Page Ref: 30

58) Business _____ are now extremely compressed, faster, and more informed across industries.
A) Problems
B) Challenges
C) Structures
D) Cycle times
Answer: D
Diff: 3 Page Ref: 30

59) The analytics type that provides estimation of the future values of variables of interest is often called _____ analytics.
A) Descriptive
B) Predictive
C) Social
D) Automated
Answer: B
Diff: 2 Page Ref: 35

60) _____ is among the key enablers of prescriptive analytics.
A) Data mining
B) Simulation
C) Data warehousing
D) RDBM
Answer: B
Diff: 2 Page Ref: 35

61) _____ providers focus on bringing all the data stores into an enterprise-wide platform.
A) Data mining
B) Simulation modeling
C) Hardware design
D) Middleware
Answer: D
Diff: 2 Page Ref: 35

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62) The user interface of a BI system is often referred to as a _____.
A) CRM
B) Simulation
C) Dashboard
D) Middleware
Answer: C
Diff: 2 Page Ref: 38

63) Data warehouses are intended to work with informational data used for online _____ processing systems.
A) Analytical
B) Transactional
C) Media
D) Middleware
Answer: A
Diff: 2 Page Ref: 31

64) With _____, all the data from every corner of the enterprise is collected and integrated into a consistent schema so that every part of the organization has access to the single version of the truth when and where needed.
A) Analytics
B) ERP
C) CRM
D) Data warehouse
Answer: B
Diff: 3 Page Ref: 26

65) As the number of potential BI applications increases, the need to justify and prioritize them arises. This is not an easy task due to the large number of _____ benefits.
A) Analytics
B) Quantitative
C) CRM
D) Intangible
Answer: D
Diff: 1 Page Ref: 33

66) _____ analytics help managers understand what happened and help them identify problems and opportunities.
A) Descriptive
B) Social
C) Predictive
D) Associative
Answer: A
Diff: 1 Page Ref: 35

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67) Accurate projections of future events and outcomes is the expected results of _____ analytics.
A) Descriptive
B) Social
C) Predictive
D) Prescriptive
Answer: C
Diff: 1 Page Ref: 35

68) Well-defined business problems and opportunities is the outcome of _____ analytics.
A) Descriptive
B) Social
C) Predictive
D) Prescriptive
Answer: A
Diff: 1 Page Ref: 35

69) Predicting whether the customer is likely to switch to a competitor is often called _____ analysis.
A) Competitive
B) Collaborative
C) Social
D) Churn
Answer: D
Diff: 2 Page Ref: 35

70) Which of the following is not among the layers in PANDA platform?
A) Visual
B) Transactional
C) Analytical
D) Collaborative
Answer: D
Diff: 3 Page Ref: 38

71) List and comment on four analytics applications in the retail value chain.
Answer:
• Inventory Optimization
• Price Elasticity
• Market Basket Analysis
• Shopper Insight
• Customer Churn Analysis
• Channel Analysis
• New Store Analysis
• Store Layout
• Video Analytics
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72) List and define the four major components of a business intelligence system.
Answer:
1. A data warehouse, with its source data
2. Business analytics, a collection of tools for manipulating, mining, and analyzing the data in the data warehouse
3. Business performance management (BPM) for monitoring and analyzing performance
4. A user interface (e.g., a dashboard)
Diff: 3 Page Ref: 33-36

73) Define OLAP and OLTP. Explain the relationship between the two.
Answer: Online transaction processing (OLTP) systems handle a company's routine ongoing business transaction, capture, storing and retrieving the relevant data often using an ERP system. Online analytical processing (OLAP), on the other hand, is the analytics system that supports managerial decisions by using data often stored in a data warehouse. The relationship between the two is that OLTP captures the data and OLAP converts the data into information and knowledge for decision support.
Diff: 3 Page Ref: 31

74) What is the intent of the analysis of data that is stored in a data warehouse?
Answer: The intent of the analysis is to give management the ability to analyze data for insights into the business, and thus provide tactical or operational decision support whereby, for example, line personnel can make quicker and/or more informed decisions.
Diff: 2 Page Ref: 19

75) Describe prescriptive analytics. What are the problems it solves, enablers it uses, and outcomes it generates.
Answer: Prescriptive analytics is the highest echelon in analytics hierarchy where decisions are made. It answers the questions of "what should I do?" and "why should I do it?" It uses simulation, optimization, decision modeling and optimization as enablers. It produces the best possible decision for business problems or opportunities.
Diff: 2 Page Ref: 35-37

76) Business applications can be programmed to act on real-time or right-time data warehousing systems. Define and contrast these two concepts (i.e., right-time and real time); in your opinion, which one is better, justify your answer.
Answer: Real-time DW aims to update the data continuously, to keep it fresh all the time. Whereas right-time DW adopts a data-refreshing policy based on the needed freshness of the data items. Although refreshing the DW continuously may sound like a better approach, it is significantly expensive and perhaps in most cases infeasible. Right time refresh seems to be the optimal balance between data currency and cost of DW management.
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77) List and describe three levels or categories of analytics that are most often viewed as sequential and independent, but also occasionally seen as overlapping.
Answer:
• **Descriptive or reporting analytics** refers to knowing what is happening in the organization and understanding some underlying trends and causes of such occurrences.
• **Predictive analytics** aims to determine what is likely to happen in the future. This analysis is based on statistical techniques as well as other more recently developed techniques that fall under the general category of data mining.
• **Prescriptive analytics** recognizes what is going on as well as the likely forecast and makes decisions to achieve the best performance possible.
Diff: 3 Page Ref: 35

78) List and define the phases in the human decision-making process. Provide examples for clarity.
Answer: The Intelligence Phase: Problem (or opportunity) identification
The Design Phase: Modeling and alternative generation
The Choice Phase: Selecting the best alternatives from the available ones (involving a multi-criteria multi-objective decision making process)
The Implementation Phase: Putting the selected solution into action, also involved change management and user training.
Diff: 2 Page Ref: 22-25

79) Describe and define Big Data. Why is a search engine a Big Data application?
Answer:
• Big Data is data that cannot be stored in a single storage unit. Big Data typically refers to data that is arriving in many different forms, be they structured, unstructured, or in a stream. Major sources of such data are clickstreams from Web sites, postings on social media sites such as Facebook, or data from traffic, sensors, or weather.
• A Web search engine such as Google needs to search and index billions of Web pages in order to give you relevant search results in a fraction of a second. Although this is not done in real time, generating an index of all the Web pages on the Internet is not an easy task.
Diff: 3 Page Ref: 27

80) List the evolution of analytics names (buzzwords) since 1970s. Why do you think the name of analytics kept changing?
Answer: 1970s: DSS, 1980s: ERP, 1990s: EIS, 2000s: BI, 2010: Business Analytics/Big Data/Data Science, 2020: AI/Deep Learning/Automation/Robotics. The reason for name change is (1) to keep the field vibrant/exciting, and (2) to capture and explicitly delineate the inclusion/enrichment of analytics methods and technologies.
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