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| 1. Business intelligence is a framework that allows a business to transform data into information, information into knowledge, and knowledge into wisdom.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 590 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic - BUSPROG: Analytic skills: Statistics and Management Science | | *TOPICS:* | Business Intellegence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 2. Business intelligence (BI) architecture is composed of data, people, processes, technology, and the management of such components.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 592 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic - BUSPROG: Analytic skills: Statistics and Management Science | | *TOPICS:* | Business Intellegence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 3. A data store is used by data analysts to create queries that access the database.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 593 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Business Intellegence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 4. Master data management’s main goal is to provide a partial and segmented definition of all data within an organization.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 595 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Business Intellegence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 5. Operational data and decision support data serve the same purpose.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 602 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-3 - LO13-3 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Decision Support Data | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 6. Decision support data are a snapshot of the operational data at a given point in time.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 603 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-3 - LO13-3 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Decision Support Data | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 7. Queries against operational data typically are broad in scope and high in complexity.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 604 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-3 - LO13-3 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Decision Support Data | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 8. Data warehouse data are organized and summarized by table, such as CUSTOMER and ADDRESS.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 608 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-4 - LO13-4 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | The Data Warehouse | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 9. Relational data warehouses use multidimensional data schema support to handle multidimensional data.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 610 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-4 - LO13-4 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | The Data Warehouse | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 10. The data warehouse development life cycle differs from classical systems development.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 610 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-4 - LO13-4 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | The Data Warehouse | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 11. A data warehouse designer must define common business dimensions that will be used by a data analyst to narrow a search, group information, or describe attributes.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | p. 612 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Comprehension | |

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| 12. By default, the fact table’s primary key is always formed by combining the superkeys pointing to the dimension tables to which they are related.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 617 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 13. Normalizing fact tables improves data access performance and saves data storage space.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 619 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 14. Periodicity, usually expressed as current year only, previous years, or all years, provides information about the time span of the data stored in a table.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 621 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 15. Multidimensional data analysis techniques include advanced computational functions.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | p. 622 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 16. Advanced OLAP  feature become more useful when access to them is kept simple   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 623 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 17. To provide better performance, some OLAP systems merge data warehouse and data mart approaches by storing small extracts of the data warehouse at end-user workstations.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 625 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Comprehension | |

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| 18. A star schema is designed to optimize data query operations rather than data update operations.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 626 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 19. ROLAP and MOLAP vendors are working toward the integration of their respective solutions within a unified decision support framework.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 629 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 20. The ROLLUP extension is used with the GROUP BY clause to generate aggregates by the listed columns, including the last one.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | p. 630 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-8 - LO13-8 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic | | *TOPICS:* | SQL Extensions for OLAP | | *KEYWORDS:* | Bloom's: Comprehension | |

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| 21. The CUBE extension enable you to get a grand total for each column listed in the expression   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 631 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 22. A \_\_\_\_\_ is optimized for decision support and is generally represented by a data warehouse or a data mart.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | data store | b. | ETL tool | |  | c. | data visualization | d. | data analysis tool |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 593 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 23. \_\_\_\_\_ are in charge of presenting data to the end user in a variety of ways.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | Data stores | b. | ETL tools | |  | c. | Data visualization tools | d. | Data analysis tools |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 593 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 24. \_\_\_\_\_ provide a unified, single point of entry for information distribution.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | Decision support systems | b. | Portals | |  | c. | Data warehouses | d. | Dashboards |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 594 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 25. In business intelligence framework, data are captured from a production system and placed in \_\_\_\_\_ on a near real-time basis.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | decision support system | b. | portal | |  | c. | data warehouse | d. | dashboard |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 594 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 26. \_\_\_\_\_ tools focus on the strategic and tactical use of information.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | Business | b. | Relational database management | |  | c. | Business intelligence | d. | Networking |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 595 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic - BUSPROG: Analytic skills: Statistics and Management Science | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 27. Which of the following is a personal analytics vendor for BI applications?   |  |  |  | | --- | --- | --- | |  | a. | IBM | |  | b. | Kognitio | |  | c. | Netezza | |  | d. | MicroStrategy |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 602 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Decision Support Data | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 28. From a data analyst’s point of view, decision support data differ from operational data in three main areas: time span, granularity, and \_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | usability | b. | dimensionality | |  | c. | transaction processing | d. | sparsity |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 602 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-3 - LO13-3 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Decision Support Data | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 29. Operational data are commonly stored in many tables, and the stored data represent information about a given \_\_\_\_\_ only.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | transaction | b. | database | |  | c. | table | d. | concept |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 604 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-3 - LO13-3 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Decision Support Data | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 30. The \_\_\_\_\_ schema must support complex (non-normalized) data representations.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | snowflake | b. | online analytical processing | |  | c. | decision support database | d. | multidimensional database |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 605 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-3 - LO13-3 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Decision Support Data | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 31. Data \_\_\_\_\_ implies that all business entities, data elements, data characteristics, and business metrics are described in the same way throughout the enterprise.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | visualization | b. | analytics | |  | c. | mining | d. | integration |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 607 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-4 - LO13-4 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | The Data Warehouse | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 32. \_\_\_\_\_ can serve as a test vehicle for companies exploring the potential benefits of data warehouses.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | Data networks | b. | Data marts | |  | c. | Data cubes | d. | OLAPs |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 610 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-4 - LO13-4 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | The Data Warehouse | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 33. Bill Inmon and Chuck Kelley created a set of 12 rules to define a(n) \_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | data warehouse | b. | multidimensional cube | |  | c. | OLAP tool | d. | star schema |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 610 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-4 - LO13-4 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | The Data Warehouse | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 34. The basic star schema has four components: facts, \_\_\_\_\_, attributes, and attribute hierarchies.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | keys | b. | relationships | |  | c. | cubes | d. | dimensions |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 610 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 35. Computed or derived facts, at run time, are sometimes called \_\_\_\_\_ to differentiate them from stored facts.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | schemas | b. | attributes | |  | c. | metrics | d. | dimensions |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 611 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 36. In a star schema, attributes are often used to search, filter, or classify \_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | tables | b. | sales | |  | c. | facts | d. | dimensions |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 612 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 37. The attribute hierarchy provides a top-down data organization that is used for two main purposes: \_\_\_\_\_ and drill-down/roll-up data analysis.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | decomposition | b. | de-normalization | |  | c. | normalization | d. | aggregation |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 614 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 38. In star schema representation, a fact table is related to each dimension table in a \_\_\_\_\_ relationship.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | many-to-one (M:1) | b. | many-to-many (M:M) | |  | c. | one-to many (1:M) | d. | one-to-one (1:1) |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 616 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 39. Fact and dimension tables are related by \_\_\_\_\_ keys.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | shared | b. | primary | |  | c. | foreign | d. | linked |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 616 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 40. In a typical star schema, each dimension record is related to thousands of \_\_\_\_\_ records.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | attribute | b. | fact | |  | c. | key | d. | primary |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 617 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 41. A \_\_\_\_\_ schema is a type of star schema in which dimension tables can have their own dimension tables.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | snowflake | b. | starflake | |  | c. | dimension | d. | matrix |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 618 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 42. \_\_\_\_\_ splits a table into subsets of rows or columns and places the subsets close to the client computer to improve data access time.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | Normalization | b. | Meta modeling | |  | c. | Replication | d. | Partitioning |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 620 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 43. The reliance on \_\_\_\_\_ as the design methodology for relational databases is seen as a stumbling block to its use in OLAP systems.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | normalization | b. | denormalization | |  | c. | star schema | d. | multidimensional schema |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 626 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 44. Decision support data tend to be non-normalized, \_\_\_\_\_, and pre-aggregated.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | unique | b. | duplicated | |  | c. | optimized | d. | sorted |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 626 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 45. \_\_\_\_\_ extends SQL so that it can differentiate between access requirements for data warehouse data and operational data.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | ROLAP | b. | OLAP | |  | c. | DBMS | d. | BI |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 626 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 46. A \_\_\_\_\_ index is based on 0 and 1 bits to represent a given condition.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | logical | b. | multidimensional | |  | c. | normal | d. | bitmapped |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 627 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 47. Conceptually, MDBMS end users visualize the stored data as a three-dimensional cube known as a \_\_\_\_\_.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | multi-cube | b. | database cube | |  | c. | data cube | d. | hyper cube |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 628 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 48. An multidimensional database management systems (MDBMS) uses proprietary techniques to store data in \_\_\_\_\_ n-dimensional arrays.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | table-like | b. | matrix-like | |  | c. | network-like | d. | cube-like |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 628 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 49. A \_\_\_\_\_ is a dynamic table that not only contains the SQL query command to generate the rows, but also stores the actual rows.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | a. | SQL view | b. | materialized view | |  | c. | star schema | d. | data cube |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 630 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-8 - LO13-8 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | SQL Extension for OLAP | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 50. \_\_\_\_\_ is a term used to describe a comprehensive, cohesive, and integrated set of tools and processes used to capture, collect, integrate, store, and analyze data with the purpose of generating and presenting information used to support business decision making.   |  |  | | --- | --- | | *ANSWER:* | Business intelligence | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 590 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 51. \_\_\_\_\_ functionality ranges from simple data gathering and transformation to very complex data analysis and presentation.   |  |  | | --- | --- | | *ANSWER:* | BI  business intelligence | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 592 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic - BUSPROG: Analytic skills: Statistics and Management Science | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 52. **\_\_\_\_\_** use web-based technologies to present key business performance indicators or information in a single integrated view, generally using graphics in a clear, concise, and easy to understand manner.   |  |  | | --- | --- | | *ANSWER:* | Dashboards | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 594 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 53. Data **\_\_\_\_\_** tools are tools that provide advanced statistical analysis to uncover problems and opportunities hidden within business data.   |  |  | | --- | --- | | *ANSWER:* | mining | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 594 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 54. **\_\_\_\_\_** are quantifiable measurements (numeric or scale based) that assess a company’s effectiveness or success in reaching its strategic and operational goals.   |  |  | | --- | --- | | *ANSWER:* | Key performance indicators  KPI  KPIs  Key performance indicators (KPI) | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 595 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic - BUSPROG: Analytic skills: Statistics and Management Science | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 55. \_\_\_\_\_ is a collection of concepts, techniques, and processes for the proper identification, definition, and management of data elements within an organization.   |  |  | | --- | --- | | *ANSWER:* | Master data management  MDM  Master data management (MDM) | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 595 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic - BUSPROG: Analytic skills: Statistics and Management Science | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 56. \_\_\_\_\_\_ is a method or process of government.   |  |  | | --- | --- | | *ANSWER:* | Governance | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 595 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-3 - LO13-3 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic - BUSPROG: Analytic skills: Statistics and Management Science | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 57. \_\_\_\_\_ . means to decompose data into more atomic components or data at lower levels of aggregation   |  |  | | --- | --- | | *ANSWER:* | Drill down | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 602 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-3 - LO13-3 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic - BUSPROG: Analytic skills: Statistics and Management Science | | *TOPICS:* | Decision Support Data | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 58. To support a(n) **\_\_\_\_\_** adequately, the DBMS might be required to support advanced storage technologies, and even more importantly, to support multiple-processor technologies, such as a symmetric multiprocessor (SMP) or a massively parallel processor (MPP).   |  |  | | --- | --- | | *ANSWER:* | VLDB  very large database  very large database (VLDB) | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 607 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-3 - LO13-3 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Decision Support Data | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 59. \_\_\_\_\_ is a read-only database optimized for data analysis and query processing.   |  |  | | --- | --- | | *ANSWER:* | Data warehouse | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 608 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-4 - LO13-4 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | The Data Warehouse | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 60. A data **\_\_\_\_\_** is a centralized, consolidated database that integrates data derived from the entire organization and from multiple sources with diverse formats.   |  |  | | --- | --- | | *ANSWER:* | warehouse | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 607 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-4 - LO13-4 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | The Data Warehouse | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 61. A data **\_\_\_\_\_** is a small, single-subject data warehouse subset that provides decision support to a small group of people.   |  |  | | --- | --- | | *ANSWER:* | mart | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 610 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-4 - LO13-4 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | The Data Warehouse | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 62. **\_\_\_\_\_** are numeric measurements (values) that represent a specific business aspect or activity.   |  |  | | --- | --- | | *ANSWER:* | Facts | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 611 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic - BUSPROG: Analytic skills: Statistics and Management Science | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 63. **\_\_\_\_\_** are qualifying characteristics that provide additional perspectives to a given fact.   |  |  | | --- | --- | | *ANSWER:* | Dimensions | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 611 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic - BUSPROG: Analytic skills: Statistics and Management Science | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 64. In multidimensional terms, the ability to focus on slices of the cube to perform a more detailed analysis is known as **\_\_\_\_\_**.   |  |  | | --- | --- | | *ANSWER:* | slice and dice | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 613 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic - BUSPROG: Analytic skills: Statistics and Management Science | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 65. The \_\_\_\_\_ hierarchy provides the capability to perform drill-down and roll-up searches in a data warehouse.   |  |  | | --- | --- | | *ANSWER:* | attribute | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 614 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 66. **\_\_\_\_\_** makes a copy of a table and places it in a different location to improve access time.   |  |  | | --- | --- | | *ANSWER:* | Replication | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 620 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-5 - LO13-5 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 67. The most distinctive characteristic of modern OLAP tools is their capacity for **\_\_\_\_\_** analysis.   |  |  | | --- | --- | | *ANSWER:* | multidimensional | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 621 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 68. To deliver efficient decision support, OLAP tools must have advanced data \_\_\_\_\_ features.   |  |  | | --- | --- | | *ANSWER:* | access | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 623 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Star Schemas | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 69. OLAP systems are designed to use both operational and data **\_\_\_\_\_** data.   |  |  | | --- | --- | | *ANSWER:* | warehouse | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 625 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 70. **\_\_\_\_\_** online analytical processing provides OLAP functionality by using relational databases and familiar relational query tools to store and analyze multidimensional data.   |  |  | | --- | --- | | *ANSWER:* | Relational | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 626 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: - Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 71. **\_\_\_\_\_** is a measurement of the density of the data held in the data cube and is computed by dividing the total number of actual values in the cube by the total number of cells in the cube.   |  |  | | --- | --- | | *ANSWER:* | Sparsity | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Easy | | *REFERENCES:* | p. 628 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic - BUSPROG: Analytic skills: Statistics and Management Science | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Knowledge | |

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| 72. What is data visualization? Name different techniques of data visualization.   |  |  | | --- | --- | | *ANSWER:* | Data visualization is the abstracting of data to provide information in a visual format that enhances a user's ability to effectively comprehend the meaning of the data. The goal of data visualization is to allow the user to see the big picture in the most efficient way possible. Data visualization aggregates the data into a format that provides at-a-glance insight into overall trends and patterns. Data visualization techniques, that can range from simple to very complex, include pie charts, line graphs, bar charts, scatter plots, gantt charts, and heat maps. | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | p. 596 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-2 - LO13-2 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Comprehension | |

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| 73. What is the difference between decision support data and operational data from the point of view of data analyst?   |  |  | | --- | --- | | *ANSWER:* | From a data analyst’s point of view, decision support data differ from operational data in three main areas: time span, granularity, and dimensionality.  Time span: Operational data cover a short time frame. In contrast, decision support data tend to cover a longer time frame. Granularity (level of aggregation): Decision support data must be presented at different levels of aggregation, from highly summarized to nearly atomic. Dimensionality: Operational data focus on representing individual transactions rather than the effects of the transactions over time. In contrast, data analysts tend to include many data dimensions and are interested in how the data relate over those dimensions. | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | p. 602-603 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-3 - LO13-3 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic | | *TOPICS:* | Business Intelligence | | *KEYWORDS:* | Bloom's: Comprehension | |

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| 74. Describe the use of SQL in relation to ROLAP.   |  |  | | --- | --- | | *ANSWER:* | Most decision support data requests require the use of multiple-pass SQL queries or multiple nested SQL statements. To answer this criticism, ROLAP extends SQL so that it can differentiate between access requirements for data warehouse data (based on the star schema) and operational data (normalized tables). A ROLAP system therefore can generate the SQL code required to access the star schema data. Query performance is also improved because the query optimizer is modified to identify the SQL code’s intended query targets. For example, if the query target is the data warehouse, the optimizer passes the requests to the data warehouse. However, if the end user performs drill-down queries against operational data, the query optimizer identifies that operation and properly optimizes the SQL requests before passing them to the operational DBMS. | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | p. 626-627 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-7 - LO13-7 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Comprehension | |

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| 75. What is the ROLLUP extension to the GROUP BY clause? Provide the syntax for this extension.   |  |  | | --- | --- | | *ANSWER:* | The ROLLUP extension is used with the GROUP BY clause to generate aggregates by different dimensions. As you know, the GROUP BY clause will generate only one aggregate for each new value combination of attributes listed in the GROUP BY clause. The ROLLUP extension goes one step further; it enables you to get a subtotal for each column listed except for the last one, which gets a grand total instead. The syntax of the GROUP BY ROLLUP command sequence is as follows:  SELECT column1 [, column2, ...], aggregate\_function(expression)  FROM table1 [, table2, …]  [WHERE condition]  GROUP BY ROLLUP (column1 [, column2, ...])  [HAVING condition]  [ORDER BY column1 [, column2, …]] | | *POINTS:* | 1 | | *DIFFICULTY:* | Difficulty: Moderate | | *REFERENCES:* | p. 630 | | *LEARNING OBJECTIVES:* | DATA.CORO.15.LO13-8 - LO13-8 | | *NATIONAL STANDARDS:* | United States - BUSPROG: Analytic - BUSPROG: Analytic skills: Statistics and Management Science | | *TOPICS:* | Online Analytical Processing | | *KEYWORDS:* | Bloom's: Comprehension | |