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| --- |
| **True / False** |

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| 1. Redundancy wastes space because you are storing different types of data in the same place.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *REFERENCES:* | 2 | |

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| 2. When you need to change data, redundancy makes your changes more cumbersome and time-consuming.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *REFERENCES:* | 2 | |

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| 3. An entity is also defined as an attribute.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *REFERENCES:* | 5 | |

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| 4. An attribute is a characteristic or property of an entity.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *REFERENCES:* | 5 | |

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| 5. An attribute is known as a row in most databases.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *REFERENCES:* | 5 | |

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| 6. A database will not only hold information about multiple types of entities, but also information about the relationships among these multiple entities.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *REFERENCES:* | 5 | |

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| 7. ​Each table in a database represents two or more entities.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *REFERENCES:* | 6 | |

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| 8. ​The relationship between different entities (in different tables) is handled by their common columns.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *REFERENCES:* | 6 | |

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| 9. ​Software packages, called database management systems, can do the job of manipulating databases for you.   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *REFERENCES:* | 10 | |

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| 10. Programs created with Visual Basic, Java, Perl, PHP, or C++ can access the database directly, rather than having to access it through the DBMS.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *REFERENCES:* | 11 | |

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| 11. To create forms to use with a database you must write a program.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *REFERENCES:* | 11 | |

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| 12. Sharing data is one advantage of database processing.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *REFERENCES:* | 13 | |

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| 13. An advantage of using the database approach to processing is that it facilitates consistency.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *REFERENCES:* | 13 | |

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| 14. A DBA can assign passwords to prevent unauthorized users from accessing the data.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | True | | *POINTS:* | 1 | | *REFERENCES:* | 15 | |

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| 15. There is a greater impact of failure in a nondatabase, file-oriented system.​   |  |  |  | | --- | --- | --- | |  | a. | True | |  | b. | False |  |  |  | | --- | --- | | *ANSWER:* | False | | *POINTS:* | 1 | | *REFERENCES:* | 16 | |

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| --- |
| **Multiple Choice** |

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| 16. ​Storing the same data in more than one place is called \_\_\_\_.   |  |  |  | | --- | --- | --- | |  | a. | ​data independence | |  | b. | ​redundancy | |  | c. | ​data integrity | |  | d. | ​security |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 2 | |

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| 17. ​A(n) \_\_\_\_ is also called a field or column in many database systems.   |  |  |  | | --- | --- | --- | |  | a. | ​attribute | |  | b. | ​entity | |  | c. | ​data file | |  | d. | ​relationship |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 5 | |

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| 18. A(n) \_\_\_\_ is a person, place, object, event, or idea for which you want to store and process data.​   |  |  |  | | --- | --- | --- | |  | a. | ​attribute | |  | b. | ​DBMS | |  | c. | ​entity | |  | d. | ​DBA |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 5 | |

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| 19. A(n) \_\_\_\_ is the computer counterpart to an ordinary paper file you might keep in a file cabinet or an accounting ledger.​   |  |  |  | | --- | --- | --- | |  | a. | ​database | |  | b. | ​spreadsheet | |  | c. | ​data file | |  | d. | ​attribute |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 6 | |

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| 20. The \_\_\_\_ of an entity become the columns in the database table.​   |  |  |  | | --- | --- | --- | |  | a. | ​attributes | |  | b. | ​tuples | |  | c. | ​data files | |  | d. | ​E-R diagrams |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 6 | |

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| 21. ​Unlike a typical data file, a database can store information about multiple \_\_\_\_.   |  |  |  | | --- | --- | --- | |  | a. | ​attributes | |  | b. | ​bytes | |  | c. | ​entities | |  | d. | ​characters |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 6 | |

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| 22. ​A visual way to represent a database is with a(n) \_\_\_\_.   |  |  |  | | --- | --- | --- | |  | a. | ​spreadsheet | |  | b. | ​DBMS | |  | c. | ​entity-relationship diagram | |  | d. | ​DBA |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 10 | |

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| 23. Popular \_\_\_\_ include Access, Oracle, DB2, MySQL, and SQL Server.​   |  |  |  | | --- | --- | --- | |  | a. | ​E-R diagrams | |  | b. | ​DBAs | |  | c. | ​data files | |  | d. | ​DBMSs |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 11 | |

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| 24. During the \_\_\_\_ process, a database expert determines the structure of the required database.​   |  |  |  | | --- | --- | --- | |  | a. | data security​ | |  | b. | ​database integrity | |  | c. | ​database design | |  | d. | ​database selection |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 11 | |

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| 25. ​\_\_\_\_ are screen objects used to maintain, view, and print data from a database.   |  |  |  | | --- | --- | --- | |  | a. | ​Fields | |  | b. | ​Forms | |  | c. | ​Data files | |  | d. | ​Entities |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 11 | |

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| 26. ​Which of the following statements is correct?​   |  |  |  | | --- | --- | --- | |  | a. | ​In a nondatabase, file-oriented environment, data is often partitioned into several disjointed systems with each system having its own collection of files. | |  | b. | ​User data cannot be combined and shared among authorized users. | |  | c. | Database users should not have access to the same information.​ | |  | d. | The elimination of redundancy is always possible.​ |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 13 | |

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| 27. ​An integrity constraint is a rule that \_\_\_\_.   |  |  |  | | --- | --- | --- | |  | a. | ​is kept in an external file | |  | b. | ​data must follow in the database | |  | c. | ​can be accessed only by authorized users | |  | d. | ​can unintentionally be accessed by unauthorized users |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 14 | |

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| 28. A database has \_\_\_\_ if the data in it satisfies all established integrity constraints.​   |  |  |  | | --- | --- | --- | |  | a. | ​redundancy | |  | b. | ​integrity | |  | c. | ​data independence | |  | d. | ​database design |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 14 | |

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| 29. \_\_\_\_ is the prevention of unauthorized access to the database.​   |  |  |  | | --- | --- | --- | |  | a. | ​Data independence | |  | b. | ​Integrity constraint | |  | c. | ​Redundancy | |  | d. | ​Security |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 15 | |

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| 30. ​A(n) \_\_\_\_ frees programmers who write database access programs from having to engage in mundane data manipulation activities, such as adding new data and deleting existing data.   |  |  |  | | --- | --- | --- | |  | a. | ​E-R diagram | |  | b. | ​DBA | |  | c. | ​entity | |  | d. | ​DBMS |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 15 | |

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| 31. A person who is in charge of a database within an organization is often called the database \_\_\_\_.​   |  |  |  | | --- | --- | --- | |  | a. | writer​ | |  | b. | ​designer | |  | c. | ​administrator | |  | d. | ​controller |  |  |  | | --- | --- | | *ANSWER:* | c | | *POINTS:* | 1 | | *REFERENCES:* | 14 | |

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| 32. A good \_\_\_\_ should provide an opportunity for users to incorporate integrity constraints when they design the database.​   |  |  |  | | --- | --- | --- | |  | a. | ​database administrator | |  | b. | ​DBA | |  | c. | ​E-R diagram | |  | d. | ​DBMS |  |  |  | | --- | --- | | *ANSWER:* | d | | *POINTS:* | 1 | | *REFERENCES:* | 14 | |

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| 33. A DBMS lets you assign users to \_\_\_\_.​   |  |  |  | | --- | --- | --- | |  | a. | ​groups | |  | b. | ​classes | |  | c. | ​attributes | |  | d. | ​clusters |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 15 | |

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| 34. ​\_\_\_\_ is a property that lets you change the structure of the database without requiring you to change the programs that access the database.   |  |  |  | | --- | --- | --- | |  | a. | ​Database design | |  | b. | ​Data independence | |  | c. | ​Integrity constraint | |  | d. | ​Data dependence |  |  |  | | --- | --- | | *ANSWER:* | b | | *POINTS:* | 1 | | *REFERENCES:* | 15 | |

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| 35. One disadvantage of a database system is \_\_\_\_.​   |  |  |  | | --- | --- | --- | |  | a. | ​a larger file size | |  | b. | ​data dependence | |  | c. | ​reduced integrity | |  | d. | ​reduced productivity |  |  |  | | --- | --- | | *ANSWER:* | a | | *POINTS:* | 1 | | *REFERENCES:* | 15 | |

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| **Completion** |

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| 36. In a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ relationship between two entities, each occurrence of the first entity is related to many occurrences of the second entity and each occurrence of the second entity is related to only one occurrence of the first entity.​   |  |  | | --- | --- | | *ANSWER:* | one-to-many  one to many​ | | *POINTS:* | 1 | | *REFERENCES:* | 25 | |

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| 37. A program, or collection of programs, through which users interact with a database is known as a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.​   |  |  | | --- | --- | | *ANSWER:* | DBMS  database management system  database management system (DBMS)  DBMS (database management system) | | *POINTS:* | 1 | | *REFERENCES:* | 10 | |

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| 38. In an E-R diagram, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ represent entities.​   |  |  | | --- | --- | | *ANSWER:* | ​rectangles | | *POINTS:* | 1 | | *REFERENCES:* | 10 | |

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| 39. In an E-R diagram, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ represent relationships between connected entities.​   |  |  | | --- | --- | | *ANSWER:* | ​lines | | *POINTS:* | 1 | | *REFERENCES:* | 10 | |

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| 40. In an E-R diagram, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ at the end of a line indicates the “many” part of the one-to-many relationship between two entities.   |  |  | | --- | --- | | *ANSWER:* | dot | | *POINTS:* | 1 | | *REFERENCES:* | 10 | |

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| 41. ​A group of people in charge of a database within an organization is often called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.   |  |  | | --- | --- | | *ANSWER:* | ​DBA  database administration  database administration (DBA)  DBA (database administration) | | *POINTS:* | 1 | | *REFERENCES:* | 14 | |

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| 42. The problem of inconsistency in data is a direct result of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.​   |  |  | | --- | --- | | *ANSWER:* | ​redundancy | | *POINTS:* | 1 | | *REFERENCES:* | 14 | |

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| 43. Eliminating \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ not only saves space but also makes the process of updating data much simpler.​   |  |  | | --- | --- | | *ANSWER:* | redundancy | | *POINTS:* | 1 | | *REFERENCES:* | 14 | |

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| 44. A good \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ has many features that allow users to gain access to data in a database without having to do any programming.​   |  |  | | --- | --- | | *ANSWER:* | DBMS  database management system  database management system (DBMS)  DBMS (database management system)​ | | *POINTS:* | 1 | | *REFERENCES:* | 15 | |

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| 45. A database file requires a large amount of disk space and internal \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.​   |  |  | | --- | --- | | *ANSWER:* | memory​ | | *POINTS:* | 1 | | *REFERENCES:* | 15 | |

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| **Essay** |

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| 46. List the advantages of database processing.​   |  |  | | --- | --- | | *ANSWER:* | Getting more information from the same amount of data  Sharing data  Balancing conflicting requirements  Controlling redundancy  Facilitating consistency  Improving integrity  Expanding security  Increasing productivity  Providing data independence | | *POINTS:* | 1 | | *REFERENCES:* | 13 | |

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| 47. Explain why it is better to try to control redundancy rather than eliminate it.​   |  |  | | --- | --- | | *ANSWER:* | Although eliminating redundancy is the ideal, it is not always possible. Sometimes, for reasons having to do with performance, you might choose to introduce a limited amount of redundancy into a database. However, even in these cases, you would be able to keep the redundancy under tight control, thus obtaining the same advantages. This is why it is better to say that you control redundancy rather than eliminate it. | | *POINTS:* | 1 | | *REFERENCES:* | 14 | |

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| 48. Discuss how the database approach and the nondatabase approach differ in terms of ensuring the security of the database.​   |  |  | | --- | --- | | *ANSWER:* | ​A DBMS has many features that help ensure the enforcement of security measures. For example, a DBA can assign passwords to authorized users; then only those users who enter an acceptable password can gain access to the data in the database. Further, a DBMS lets you assign users to groups, with some groups permitted to view and update data in the database and other groups permitted only to view certain data in the database. With the nondatabase approach, you have limited security features and are more vulnerable to intentional and accidental access and changes to data. | | *POINTS:* | 1 | | *REFERENCES:* | 15 | |

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| 49. List the disadvantages of database processing.   |  |  | | --- | --- | | *ANSWER:* | Larger file size  Increased complexity  Greater impact of failure  More difficult recovery​ | | *POINTS:* | 1 | | *REFERENCES:* | 15 | |

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| 50. Explain why the impact of failure is greater in database processing, compared with the nondatabase approach.​   |  |  | | --- | --- | | *ANSWER:* | In a nondatabase, file-oriented system, each user has a completely separate system; the failure of any single user’s system does not necessarily affect any other user. On the other hand, if several users are sharing the same database, a failure on the part of any one user that damages the database in some way might affect all the other users.​ | | *POINTS:* | 1 | | *REFERENCES:* | 16 | |