**Chapter 05 :** Data Resource Management

**True / False Questions**

1. Variable-length records contain a variable number of fields with fixed field lengths.

True False

2. When independent of any other files related to it, a single table is referred to as a compressed file.

True False

3. Files are frequently classified by the application for which they are primarily used, such as a payroll file or an inventory file.

True False

4. A master file is an integrated collection of logically related data elements.

True False

5. Databases contain data elements that describe both entities and the relationships among entities.

True False

6. Database management packages based on the relational model can link data elements from various tables to provide information to users.

True False

7. The project operation is used to create a subset of the columns contained in the temporary tables created by the select and join operations.

True False

8. A major benefit of multidimensional databases is that they are a compact and easy-to-understand way to visualize and manipulate data elements that have many interrelationships.

True False

9. Multidimensional databases have become the least popular structure for analytical databases that support online analytical process (OLAP) applications, in which fast answers to complex queries are expected.

True False

10. The multidimensional database structure is considered one of the key technologies of a new generation of Web-based applications.

True False

11. A database with a network data structure can easily handle a many-to-many data relationship, whereas a hierarchical model cannot.

True False

12. The network model can easily handle ad hoc requests for information, whereas the hierarchical model cannot.

True False

13. All of the relationships between the data elements in a relationally organized database need to be specified when the database is created.

 True False

14. Relational databases are more difficult for programmers to work with and more difficult to maintain than the hierarchical and network models.

True False

15. Large organizations usually place control of enterprise-wide database development in the hands of database administrators (DBAs) and other database specialists.

True False

16. An active data dictionary will prevent a data entry program from using a nonstandard definition of a customer record.

True False

17. A data model serves as a logical framework on which to base the physical design of a database.

True False

18. Distributed databases can reside on network servers on the World Wide Web, on corporate intranets, or on corporate extranets.

True False

19. A large database system is often distributed into smaller databases based on some logical relationship between the data and the location of the databases.

True False

20. In a distributed database system, each location gains control of its local data, but loses access to data in other locations.

True False

 21. One drawback to the database duplication process is that no changes can ever be made to any database other than the master. Otherwise, local changes will be overwritten during the duplication process.

True False

22. Distributed databases require fewer resources when it comes to computing power and bandwidth.

True False

23. In a traditional file processing approach, each business application is designed to use one or more specialized data files containing only specific types of data records.

True False

24. Having data in independent files makes it easier to provide end users with information for ad hoc requests.

True False

25. In file processing systems, application programs typically contain references to the specific format of the stored data.

True False

26. In file processing systems, it was easy for data elements, such as stock numbers and customer addresses, to be defined differently by different end users and applications.

True False

27. Boolean logic was developed during the latter part of the 1900s.

True False

28. The Internet is nothing more than the world's largest database.

True False

29. DBMS packages play a major role in application development.

True False

**Multiple Choice Questions**

30. In all information systems, data resources must be organized and structured in some logical manner, so that they can be:

1. Easily accessed
2. Processed efficiently
3. Retrieved quickly
4. All of the choices are correct.

 31. From a logical point of view, a(n) \_\_\_ is the smallest data element that can be observed and manipulated.

1. character
2. bit
3. attribute
4. byte

32. A record represents a collection of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that describe an entity.

1. characters
2. fields
3. files
4. attributes

33. All the fields used to describe the attributes of an entity are grouped to form a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. field
2. record
3. file
4. database

34. A group of related records is a data file, or a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. field
2. record
3. table
4. database

35. Variable-length records contain:

1. both a variable number of fields and variable field lengths.
2. both a variable number of fields and fixed field lengths.
3. both a fixed number of fields and variable field lengths.
4. both a fixed number of fields and fixed field lengths.

36. Fixed-length records contain:

1. both a variable number of fields and variable field lengths.
2. both a variable number of fields and fixed field lengths.
3. both a fixed number of fields and variable field lengths.
4. both a fixed number of fields and fixed field lengths.

37. When independent of any other files related to it, a single table is referred to as a(n):

1. Independent file
2. Flat file
3. Hierarchical file
4. Non-variable file

38. A(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an integrated collection of logically related data elements.

1. master file
2. program base
3. database
4. integrated file

39. Databases contain data elements that describe both entities and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ among entities.

1. relationships
2. disparities
3. subsets
4. applications

40. Database management packages based on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ model can link data elements from various tables to provide information to users.

1. object-oriented
2. relational
3. network
4. hierarchical

41. Early mainframe DBMS packages used the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ structure, in which all records are dependent and arranged in multilevel structures, consisting of one root record and any number of subordinate levels.

1. network
2. relational
3. hierarchical
4. object-oriented

42. In a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ database structure, all of the relationships among records are one-to-many, because each data element is related to only one element above it.

1. hierarchical
2. relational
3. network
4. object-oriented

43. Which database model allows many-to-many relationships among records so that a data element can be accessed by following one of several paths?

1. Hierarchical
2. Network
3. Object-oriented
4. Relational

44. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ model is the most widely used database structure today.

1. network
2. object-oriented
3. relational
4. hierarchical

45. In the relational database model, all data elements within the database are viewed as being stored in the form of simple two-dimensional tables, sometimes referred to as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. records
2. rows
3. columns
4. relations

46. The tables in a relational database are flat files which have rows and columns. Each row represents a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the file.

1. field
2. record
3. file
4. relation

47. The tables in a relational database are flat files which have rows and columns. Each column represents a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the file.

1. field
2. record
3. file
4. relation

48. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ operation is used to create a subset of the columns contained in the temporary tables created by the select and join operations.

1. link
2. relate
3. project
4. merge

49. Using a relational database, a user can temporarily combine two or more tables so that he/she can see relevant data in a form that looks like it is in one big table. This is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ operation.

1. join
2. link
3. merge
4. select

50. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the most commonly used database application for the PC.

1. Oracle 10g
2. Microsoft Access
3. DB2
4. SQL Server

51. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ databases have become the most popular structure for analytical databases that support online analytical process (OLAP) applications, in which fast answers to complex queries are expected.

1. Relational
2. Object-oriented
3. Inter-relational
4. Multidimensional

52. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ database structure is considered one of the key technologies of a new generation of Web-based applications.

1. hierarchical
2. relational
3. object-oriented
4. multidimensional

53. The object-oriented database model supports \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. That is, new objects can be automatically created by replicating some or all of the characteristics of one or more parent objects.

1. inheritance
2. morphing
3. duplication
4. cloning

54. Object technology allows designers to do all of the following except:

1. Develop product designs
2. Replicate product designs and then modify them to create new product designs
3. Save designs as objects in an object-oriented database
4. Substantially reduce the file size of designs

55. Which database structure works effectively with complex data types, such as video clips, audio segments, and other subsets of Web pages, and is considered one of the key technologies of Web-based applications?

1. Hierarchical
2. Network
3. Object-oriented
4. Relational

56. A database with a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ data structure can easily handle a many-to-many data relationship.

1. hierarchical
2. network
3. relational
4. object-oriented

57. A database with a(n) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ data structure can easily handle ad hoc requests for information.

1. hierarchical
2. network
3. relational
4. object-oriented

58. According to one database pioneer, the future development of databases and data warehouses will depend on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. rows
2. columns
3. transaction
4. All of the choices are correct.

59. Large organizations usually place control of enterprise-wide database development in the hands of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Database administrators (DBAs)
2. Automated CASE tools
3. End users
4. All of the choices are correct.

60. According to the text, most data warehouses will run \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in a column format.

1. 20 times faster
2. 50 times faster
3. 50 times slower
4. None of the choices are correct.

61. Database administrators and database design analysts work with end users and systems analysts to do all of the following except:

1. Model business processes and the data they require
2. Determine what data definitions should be included in the database
3. Determine what structure or relationships should exist among the data elements
4. Enter live data into the system until it has proven to be reliable

62. \_\_\_\_\_\_\_ are used to model the relationships among the many entities involved in business processes.

1. Entity-relationship diagrams
2. Data-flow diagrams
3. Schema diagrams
4. Subschema diagrams

63. The physical design stage of database development:

1. Develops a model of business processes
2. Translates conceptual models into the data models
3. Determines the data storage structures and access methods
4. Defines the information needs of end users in a business process

64. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ stage of database development translates the conceptual models into the data model of a DBMS.

1. data planning
2. requirements specification
3. conceptual design
4. logical design

65. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an overall logical view of the relationships among the data elements in a database.

1. schema
2. subschema
3. logical data model
4. conceptual design

66. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is an overall logical view of the relationships needed to support specific end-user application programs that will access the database.

1. schema
2. subschema
3. logical data model
4. conceptual design

67. According to the textbook case, the innovation of the open-source product Hadoop is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. that it has not been sued by Google
2. that it actually works
3. that it has no proprietary predecessor
4. its algorithms run contrary to contemporary mathematics

68. According to the textbook case, file processing in Hadoop is not halted by hardware failures because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Hadoop is a software product
2. Open-source products are not affected by hardware failures
3. Hadoop is an Internet product and does not need hardware
4. Hadoop keeps three (3) copies of all data

69. Operational databases store the detailed data needed to support the business processes and operations of a company. They are also called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Subject area databases
2. Transaction databases
3. Production databases
4. All of the choices are correct.

70. The primary challenge of a distributed database is:

1. Data accuracy
2. Data transmission speed
3. Storage costs
4. Data security

71. Which of the following statements concerning the replication and duplication process for updating distributed databases is correct?

1. The two terms are interchangeable because the processes work the same way
2. Duplication is the more complicated process because it has to identify one database as a master and prevent changes being made to any database other than the master
3. Replication is the more complicated process because it must find changes in each distributed database and make appropriate changes to make each database identical
4. None of the choices are correct.

72. What type of databases are employees using when they access online data banks, whether those data banks are free or paid for through subscriptions?

1. Common databases
2. Distributed databases
3. External databases
4. Local databases

73. A central source of data that have been cleaned, transformed, and cataloged so that they can be used for business analysis, market research, and decision support is called a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. data mart
2. data warehouse
3. transaction processing mart
4. data repository

74. A data warehouse contains data that have been processed in all the following ways except:

1. Separated
2. Cleaned
3. Transformed
4. Cataloged

75. Which of the following is true of data marts?

1. They hold data from many different data warehouses.
2. They are a subset of a data warehouse.
3. They focus on many generalized aspects of a company.
4. None of the choices are correct.

76. Which of the following is true of data in a data warehouse?

1. Data in operational databases is ever changing; data in data warehouses is static
2. Data in operational databases is static; data in data warehouses is ever changing
3. Data in operational databases can be cataloged; data in data warehouses cannot
4. None of the choices are correct.

77. Which of the following is a legitimate use for data mining?

1. Performing "market-basket analysis" to identify new product bundles
2. Profiling customers
3. Finding the root cause of a quality or manufacturing problem
4. All of the choices are correct.

78. All of the following contribute to problems when using a file management approach except:

1. Data redundancy
2. Lack of integration of data
3. Data independence
4. Lack of data integrity

79. Database management involves the use of database management software to control how databases are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. created
2. interrogated
3. maintained
4. All of the choices are correct.

80. In mainframe and server computer systems, the database management system controls the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the databases of computer-using organizations.

1. maintenance
2. development
3. use
4. All of the choices are correct.

81. All of the following are major functions of a database management system except:

1. Creating new databases and database applications
2. Identifying insufficient data processing or storage needs
3. Maintaining the quality of the data in an organization's databases
4. Using the databases of an organization to provide the information needed by its end users

82. Database development involves defining and organizing the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the data needed to build a database.

1. structure
2. content
3. relationships
4. All of the choices are correct.

83. A DBMS query language is designed to:

1. Support information systems professionals in the development of complex application software
2. Support end users who wish to obtain ad hoc reports
3. Provide efficient batch mode processing of the database
4. Specify the content, relationships, and structure of a database

84. The database maintenance process is accomplished via:

1. Hierarchical database systems that provide flexibility and network databases
2. Transaction processing systems and other end user applications, with the support of the DBMS
3. Graphical query languages correctly phrasing SQL
4. File processing systems with the support of 4GLs

85. The basic form of a SQL query is:

1. SELECT … AND … OR
2. SELECT … WHERE … FROM …
3. SELECT … FROM … WHERE …
4. AND … OR … NOT …

86. Boolean logic deals with three logical operators:

1. AND, OR, and BUT
2. AND, NOT, and BUT
3. OR, BUT, and NOT
4. AND, OR, and NOT

87. Many end users have trouble correctly phrasing database language search queries, so most end-user DBMS packages now offer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ methods.

1. speech recognition
2. command line
3. GUI
4. All of the choices are correct.