

“Databases and DB Management Systems”

Online Course

Final Exam

True/False

Indicate whether the sentence or statement is true or false.

- ___ 1. Data redundancy is reduced 100% by database files.
- ___ 2. A single user database can support more than one user at the same time.
- ___ 3. A single user database can support one user at the same time.
- ___ 4. To start Microsoft Access, click the start button, select programs, and then click Microsoft Access.
- ___ 5. The final outcome of a natural JOIN yields a table that provides only the copies of the un-matched pair.
- ___ 6. In a relational table, each table row (tuple) does not necessarily represent a single entity occurrence within the entry set.
- ___ 7. Date attributes contain calendar dates stored in a special format known as Julian date format.
- ___ 8. The proper use of foreign keys is crucial to exercising data redundancy control.
- ___ 9. The entity relationship (E-R) model is used to simplify the different views of the data at the conceptual level.
- ___ 10. The conceptual model is the basis for the identification of the main data objects, avoiding details.
- ___ 11. One of the conceptual model disadvantages is that it provides a relatively easily understood bird's eye view of the data environment.
- ___ 12. Knowing the minimum and maximum number of entity occurrences is very useful at the application software level.
- ___ 13. If database tables are treated as though they were files in a file system, the RDBMS never has a chance to demonstrate its superior data-handling capabilities.
- ___ 14. Dependencies can be identified with the help of the dependency diagram.
- ___ 15. Because a partial dependency can exist only if a table's primary key is composed of several attributes, a table whose primary key consists of only a single attribute must automatically be in 2NF if it is in 1NF.
- ___ 16. A table is in Third Normal Form (3NF) if it is in 2NF and it includes no transitive dependencies.
- ___ 17. The ANSI SQL standards are also accepted by the International Organization for Standardization.
- ___ 18. **CREATE DOMAIN MARITAL_STATUS AS VARCHAR(8)
CHECK (VALUE IN ('Single', 'Married', 'Divorced', 'Widowed'))**

The check clause is used to define a condition for the values that the attribute domain can not have.
- ___ 19. Microsoft Access users can use Access QBE (query by example) query generator.
- ___ 20. Because COUNT is designed to tally the number of specific "values" of an attribute, it is used in conjunction with the DISTINCT clause.

- ___ 21. Database design takes place within the confines of an information system.
- ___ 22. During the initial stages of the implementation phase, the system enters into a cycle of coding, testing, and debugging.
- ___ 23. Once a transaction has been guaranteed access to the database, it may manipulate the database contents.
- ___ 24. The phenomenon of uncommitted data occurs when two transactions are executed concurrently and the first transaction is rolled back after the second transaction has already accessed the uncommitted data violating the isolation property of transactions.
- ___ 25. A shared lock produces no conflict as long as all the concurrent transactions are read-write only.
- ___ 26. During the write phase the changes are permanently applied to the database.
- ___ 27. Database recovery restores a database from an inconsistent state to a previously consistent state.
- ___ 28. A differential backup of the data is when only the last modifications done to the database are copied.
- ___ 29. Object Technology draws its strength from powerful programming, modeling techniques, and advanced data-handling capabilities.
- ___ 30. Object orientation is defined as a set of design and development principles based on conceptually autonomous computer structures known as objects.
- ___ 31. In a late-binding environment, the object's attribute data type is known prior to its use.
- ___ 32. A client/server infrastructure, known as the client/server architecture, is a prerequisite to the proper deployment of client/server systems.
- ___ 33. The client does not need to have access to an operating system with multitasking capabilities.
- ___ 34. Building on ODBC's success, Microsoft now promotes the use of OLE DB as the new strategic database middleware.
- ___ 35. To facilitate the decision-making process, the decision support system (DSS) was developed.
- ___ 36. DSS data are commonly stored in many tables, and the stored data represents the information about a given transaction only. Operational data are generally stored in a few tables that store data derived from the operation data.
- ___ 37. The query results are always evaluated with data analysis tools supported by the DSS DBMS.
- ___ 38. The data warehouse data must be integrated to provide a consistent view for all organizational components.
- ___ 39. Data marts can serve as a test vehicle for companies exploring the potential benefits of data warehouses.
- ___ 40. Support and enhancement of business operations over the web is referred to as e-commerce.
- ___ 41. Companies use the internet to streamline their production and distribution processes and to enhance their internal and external operations.
- ___ 42. Static web pages are used to display information that changes over time.
- ___ 43. The XML schema is an advanced data definition language that is used to describe the structure of XML documents.
- ___ 44. IS departments face the need to create universal data access architectures based on Internet standards to streamline operations and to facilitate decision making.

- ___ 45. The effects of bad database design, implementation, and management are multiplied in an environment in which transactions may be measured in millions per day, rather than in hundreds per day.
- ___ 46. The Web's ability to access data in databases (local or remote), the simplicity of the interface, and crossplatform functionality is at the core of changing the way the Internet generates information.
- ___ 47. The label stateless system indicates that, at any given time, a Web server knows the status of the clients communicating with it.
- ___ 48. At the Web server level, most Web clients and servers can perform secure transactions by using encryption routines at the TPC/IP protocol level.
- ___ 49. Physical protection of hardware and software must be accomplished by the use of open installations with restricted area access.
- ___ 50. CASE is based on the use of structured methodologies and powerful graphical interfaces.

Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

- ___ 51. The Access DBMS allows you to create structure containing
 - a. fields.
 - b. tables.
 - c. relationships.
 - d. all of the above
 - e. none of the above
- ___ 52. A relational database is a group of
 - a. common fields.
 - b. field values.
 - c. records.
 - d. related tables.
- ___ 53. Which of the following could not be defined as a field in a database?
 - a. FIRST_NAME
 - b. ADDRESS_1
 - c. STATE
 - d. ZIP CODE
 - e. all of the above
- ___ 54. Using a CUSTOMER database, what would not be an appropriate report for the sales department?
 - a. Monthly summaries of amounts of insurance sold by each agent.
 - b. Report on agent travel expenses.
 - c. Report that analyzes the ratios of insurance types sold by each agent.
 - d. Monthly checks to determine which customers must be contacted for renewal.

- _____ 55. DBMS performs several important functions that guarantee the integrity and consistency of the data in the database. Which of the following is **NOT** one of those functions?
- a. Multiuser access control
 - b. Data integrity management
 - c. Database access languages
 - d. End of month reports
- _____ 56. The hierarchical database model depicts a set of _____ relationship.
- a. many to one
 - b. one to one
 - c. one to many
 - d. many to many
- _____ 57. The network database models have
- a. a navigational system that yields simple design.
 - b. a simple system that promotes efficiency.
 - c. an owner/member relationship that promotes database integrity.
 - d. a and b
 - e. b and c
- _____ 58. An ad hoc query is
- a. a pre-scheduled question.
 - b. a spur of the moment question.
 - c. a pre-planned question.
 - d. none of the above
- _____ 59. A table's contents are displayed as rows and columns in
- a. a datasheet view.
 - b. a database form.
 - c. the query windows.
 - d. the export window.
- _____ 60. The referential integrity rule requires that
- a. every null foreign key value must reference an existing primary key value.
 - b. it makes it possible for an attribute to have a corresponding value.
 - c. every non-null foreign key value must reference an existing primary key value.
 - d. it makes it possible to delete a row in one table whose primary key does not have a matching foreign key value in another table.
- _____ 61. The logical view of the relational database is facilitated by
- a. the wizard.
 - b. the use of tables.
 - c. the creation of queries using the wizard.
 - d. the creation of data relationships based on a construct known as table.

- ___ 62. When creating a table, what happens when you do not assign a field as primary key?
- a. The table will not have a primary or foreign key.
 - b. The program will select one of your fields as primary key.
 - c. The table will not have a primary key but it will have a foreign key.
 - d. The program will create an ID field and assign it as primary key.
- ___ 63. In general terms the _____ key is an attribute (or combination of attributes) that uniquely identifies any given entity.
- a. indexed
 - b. primary
 - c. foreign
 - d. redundant
- ___ 64. A _____ key is any key that identifies each entity uniquely. It functionally determines all of the entity's attributes.
- a. superkey
 - b. primary
 - c. foreign
 - d. combined
- ___ 65. A _____ key is defined as a key that is used strictly for data retrieval purposes.
- a. primary
 - b. foreign
 - c. secondary
 - d. data
- ___ 66. An attribute (or combination of attributes) in one table whose values must either match the primary key in another table or be null is called a
- a. superkey.
 - b. candidate key.
 - c. primary key.
 - d. secondary key.
 - e. foreign key.
- ___ 67. The link can be described by observing that it is created when
- a. two tables share a common attribute.
 - b. two tables share different attributes.
 - c. a primary key of one table appears as a foreign key in a related table.
 - d. a and b
 - e. a and c
- ___ 68. A field name can begin with a
- a. period.
 - b. dash.
 - c. character.
 - d. dollar sign.

- _____ 69. Database designers must obtain a precise description of the nature of the _____ and the many uses of such data within an organization.
- sources
 - data
 - software
 - objects
- _____ 70. Database designers employ data models as communications tools to facilitate the interaction among
- the designers.
 - the applications programmers.
 - the users.
 - all of the above.
- _____ 71. The external model is
- DBMS independent and hardware independent.
 - DBMS dependent and hardware dependent.
 - DBMS dependent and hardware independent.
 - DBMS independent and hardware dependent.
- _____ 72. A derived attribute
- must be stored physically within the database.
 - need not be physically stored within the database.
 - is derived by using an algorithm.
 - a and c
 - b and c
- _____ 73. Normalization stages are
- 1NF.
 - 2NF.
 - 3NF.
 - all of the above.
 - none of the above.
- _____ 74. The term first normal form (1NF) describes the tabular format in which:
- all the key attributes are defined.
 - there are no repeating groups in the table. Row/column intersection can contain one and only one value, not a set of values.
 - all attributes are dependent on the primary key.
 - all of the above
 - none of the above
- _____ 75. A table that has all key attributes defined, has no repeating groups. and all its attributes are dependent on the primary key, is said to be in
- 1NF.
 - 2NF.
 - 3NF.
 - 4NF.
 - BCNF.

- ____ 76. You can define a domain by
- giving it a name and a data type.
 - a data type with a value.
 - a data type and a default value.
 - giving it a name, data type, value, and a domain constraint.
 - giving it a name, data type, default value, and a domain constraint.
- ____ 77. The SQL command that lets you save your work to disk, is
- insert.
 - select.
 - commit.
 - update.
 - rollback.
- ____ 78. To create a query using a mathematical symbol to find all codes but code (21344) from the product table you must write it as
- ```
SELECT P_DESCRIPTION, P_INDATE, P_PRICE, V_CODE
FROM PRODUCT
WHERE V_CODE <> 21344;
```
  - ```
SELECT P_DESCRIPTION, P_INDATE, P_PRICE, V_CODE
FROM PRODUCT
WHERE V_CODE <= 21344;
```
 - ```
SELECT P_DESCRIPTION, P_INDATE, P_PRICE, V_CODE
FROM PRODUCT
WHERE V_CODE = 21344;
```
  - ```
SELECT P_DESCRIPTION, P_INDATE, P_PRICE, V_CODE
FROM PRODUCT
WHERE V_CODE => 21344;
```
- ____ 79. To create a query using a mathematical symbol to find all codes that are equal or are less than code (21344) from the product table you must write it as
- ```
SELECT P_DESCRIPTION, P_INDATE, P_PRICE, V_CODE
FROM PRODUCT
WHERE V_CODE <> 21344;
```
  - ```
SELECT P_DESCRIPTION, P_INDATE, P_PRICE, V_CODE
FROM PRODUCT
WHERE V_CODE <=21344;
```
 - ```
SELECT P_DESCRIPTION, P_INDATE, P_PRICE, V_CODE
FROM PRODUCT
WHERE V_CODE => 21344;
```
  - ```
SELECT P_DESCRIPTION, P_INDATE, P_PRICE, V_CODE
FROM PRODUCT
WHERE V_CODE = 21344;
```

___ 80. To select a character-based attribute (1558-QW1) from the product table you would write your query command

- a.

```
SELECT P_CODE, P_DESCRIPT, P_ONHAND, P_MIN, P_PRICE
FROM PRODUCT
WHERE P-CODE = '1558-QW1'
```
- b.

```
SELECT P_CODE, P_DESCRIPT, P_ONHAND, P_MIN, P_PRICE
FROM PRODUCT
WHERE P-CODE = "1558-QW1"
```
- c.

```
SELECT P_CODE, P_DESCRIPT, P_ONHAND, P_MIN, P_PRICE
FROM PRODUCT
WHERE P-CODE = (1558-QW1)
```
- d.

```
SELECT P_CODE, P_DESCRIPT, P_ONHAND, P_MIN, P_PRICE
FROM PRODUCT
WHERE P-CODE = {1558-QW1}
```

___ 81. The basic SQL aggregate function that gives the total of all values for a selected attribute in a given column is

- a. COUNT
- b. MIN
- c. MAX
- d. SUM
- e. AVG

___ 82. The coding, testing, and debugging are part of the

- a. planning phase.
- b. analysis phase.
- c. detail system design phase
- d. implementation phase
- e. maintenance phase.

___ 83. The installation and fine tuning are part of the

- a. planning phase.
- b. analysis phase.
- c. detail system design phase.
- d. implementation phase.
- e. maintenance phase.

___ 84. Creating the conceptual design, DBMS software selection, creation of the logical design, and creating the physical design are part of the

- a. database initial study phase.
- b. database design phase.
- c. implementation and loading phase.
- d. testing and evaluation phase.
- e. operation phase.

85. Suppose that an account wishes to register the credit of 50 units of product X to customer Y in the amount of \$350. The required transactions can be completed by:

- 1) reducing product X's quantity on hand (QQH) by 50
- 2) adding \$350 to customer Y's accounts receivable.

Using SQL you would write:

- a. UPDATE PRODUCT
SET PROD_QQH = PROD_QQH - 50
WHERE PROD_CODE = 'X';
UPDATE ACCT_RECEIVABLE
SET ACCT_BALANCE = ACCT_BALANCE + 350
WHERE ACCT_NUM = 'Y';
- b. UPDATE PRODUCT
SET PROD_QQH = PROD_QQH - 50
WHERE PROD_CODE = 'X';
UPDATE ACCT_RECEIVABLE
SET ACCT_BALANCE = ACCT_BALANCE + 350
WHERE ACCT_NUM = 'Y';
- c. UPDATE PRODUCT
SET PROD_QQH = PROD_QQH - 50
WHERE PROD_CODE = 'X';
UPDATE ACCT_RECEIVABLE
SET ACCT_BALANCE = ACCT_BALANCE + 350
WHERE ACCT_NUM = 'Y';
- d. UPDATE PRODUCT
SET PROD_QQH = PROD_QQH - 50
WHERE PROD_CODE = 'X';
UPDATE ACCT_RECEIVABLE
SET ACCT_BALANCE = ACCT_BALANCE + 350
WHERE ACCT_NUM = 'Y';

86. All transactions properties must display

- a. atomicity, serializability, and durability.
- b. durability and isolation.
- c. serializability, durability, and isolation.
- d. atomicity, durability, serializability, and isolation.

87. A condition that occurs when two transactions wait for each other to unlock data is known as a(n)

- a. shared lock.
- b. exclusive lock.
- c. binary lock.
- d. two-phase lock.
- e. deadlocks.

88. What feature is a DDBMS disadvantage?

- a. processor independence
- b. user-friendly interface
- c. security
- d. faster data access

- ___ 89. To create an abstract data type the end user must define
- its name.
 - the data representation or instance variables of the abstract data type.
 - the abstract data type operations and constraints, both of which are implemented through methods.
 - b and c only
 - a, b and c
- ___ 90. An object can be classified according to the characteristics of its attributes as
- simple and compound.
 - composite, associative, and hybrid.
 - a only
 - b only
 - a and b
- ___ 91. The concept of class allows
- the description of the data structure and the description of the behavior of the class objects
 - the concept and the implementation of the abstract data types in the OODM.
 - a only
 - b only
 - a and b
- ___ 92. Client/server allows the end user to
- focus on building systems that are independent of any hardware or software platform.
 - optimize the distribution of the processing activities among the unique computer platforms.
 - make use of a combination of techniques, methodologies, and specialized tools to develop systems that are user-friendly and cost effective.
 - a and c
 - a, b and c
- ___ 93. The use of database middleware yields
- network independence.
 - database server independence.
 - a and b
 - a only
 - b only
- ___ 94. The OSI network reference model that establishes and controls communication between applications, ensures security, delivery, and communications recovery is referred to as the _____ layer.
- application
 - presentation
 - session
 - transport
 - network

- _____ 95. To function properly, the client/server DBMS must be able to
- provide transparent data access to multiple and heterogeneous clients and allow client requests to the database server over the network.
 - process client data requests at the local server, and send the SQL results to all the clients over the network.
 - a only
 - b only
 - a and b
- _____ 96. Multidimensional data analysis techniques are augmented by the following functions:
- advanced computational functions
 - advance data modeling functions
 - a only
 - a and b
 - b only
- _____ 97. In building the perfect data warehouse the designer must
- involve end users in the process.
 - secure end user's commitment from the beginning.
 - create continuous end-user feedback.
 - a and c
 - a, b, and c
- _____ 98. The introduction of a DBMS into an organization has been described as a process that includes important aspects such as
- technological - DBMS software and hardware.
 - managerial - administrative functions.
 - cultural - corporate resistance to change.
 - none of the above
 - all of the above
- _____ 99. It is common practice to define the DBA function by dividing the DBA operations according to the database life cycle. The DBA function requires personnel to cover the following activities:
- database physical design and implementation
 - database testing and debugging
 - database compressing
 - a and b only
 - a, b and c
- _____ 100. It is common practice to define the DBA function by dividing the DBA operations according to the database life cycle. The DBA function requires personnel to cover the following activities:
- database operations and maintenance, including installation, conversion, and migration.
 - database training and support.
 - a only
 - b only
 - a and b

Completion

Complete each sentence or statement.

101. A DBMS that supports multiple users (50 or less) is classified as a(n) _____.
102. Each row of data in a table that is a set of related fields is known as a(n) _____.
103. To start Access, click the _____ button, select programs, and click on Microsoft Access.
104. Some older DBMS might impose constraints restricting the column names to ten _____.
105. The numeric data format are data on which you can perform meaningful _____ procedures.
106. Character data can contain any character or symbol not intended for _____ manipulation.
107. The entity relationship (E-R) model is used to _____ the different views of the data at the conceptual level.
108. The Chen model is specially useful to illustrate some of the _____ elements of database design.
109. A(n) _____ attribute need not be physically stored within the database.
110. Attributes have a(n) _____.
111. If database tables are treated as though they were files in a file system, the _____ never has a chance to demonstrate its superior data-handling capabilities.
112. The price paid for increased performance through denormalization is a larger amount of _____.
113. _____ is a very important database design ingredient and the highest level is not always the most desirable.
114. SQL has become the basis for present and expected future _____ integration efforts, allowing the user to link hierarchical, network, relational, and object-oriented databases.
115. SQL allows the use of logical restrictions on its inquiries such as OR, AND, _____.
116. Once the data have been loaded into the database, the _____ tests and fine-tunes the database for performance, integrity, concurrent access, and security constraints.
117. Most real-world database transactions are formed by two or more _____ requests.
118. Although the DBMS is designed to recover a database to a previous consistent state when an interruption prevents the completion of a required set of transaction, the transactions themselves are defined by the end user or programmer and must be _____ correct.
119. _____ control is important because the simultaneous execution of transactions over a shared database can create several data integrity and consistency problems.
120. The _____ establishes the order in which the operations within concurrent transactions are executed.
121. Current distributed database management systems are subject to some problems such as a(n) _____ standard(s).

122. Differentiating between the data processing and storage leads to several distributed _____ in which some degree of distribution is achieved by the DBMS.
123. Depending on the level of support for different types of centralized DBMSs, DDBMSs are classified as either _____ or heterogeneous.
124. The _____ operation performs the operation and records the "before" and "after" values in the transaction log.
125. _____ inheritance exists when a class has only one immediate parent superclass above it.
126. _____ inheritance exists when a class has more than one parent superclass above it.
127. The _____ supports the class-subclass relationship and the attribute-class relationship.
128. The _____ relationship exists when an object's attribute references another object of the same or different class.
129. A desirable OODM characteristic is its ability to let the object's _____ contain objects that define different data types at different times.
130. The hierarchical and CODASYL models support some form of ID that can be considered similar to the _____.
131. A thin client is one that conducts a(n) _____ of processing on the client side.
132. A fat _____ carries the preponderance of processing burdens.
133. Whatever information-generating approach is used, it most likely relies on data that are extracted, summarized, and stored in some type of data _____.
134. Data analysis can provide information about _____ tactical evaluations and strategies.
135. The data warehouse data must conform to uniform structures and _____ to avoid data conflicts.
136. Multidimensional data analysis is also affected by how the database system handles _____.
137. The _____ table is a special table that is used by the Web site to temporarily store the products during the customer's shopping activities.
138. The Web's ability to access data in databases either local or remote, the simplicity of the interface, and crossplatform functionality is at the _____ of changing the way the Internet generates information.
139. The Web server is the main _____ through which all Internet services are accessed.
140. When an end-user uses a Web browser to dynamically query a database, the client browser actually requests a(n) _____ page.
141. APIs are faster than _____ scripts because the code is resident in memory and there is no need to run an external program for each request.
142. The Web browser's job is to interpret the _____ code that it receives from the Web server and to present the different page components in a standard way.

143. The DBMS must provide tools that give each level of _____ a different view of the data, and support the required level of decision making.
144. The security, privacy, and integrity of the data in the database are of great concern to DBAs who manage current DBMS _____.
145. The DBA must define data views to protect and control the scope of the data that are accessible to a(n) _____ user.
146. The DBA must audit the use of the data in the database. This can be accomplished by the use of an audit log, which automatically records a brief description of the database _____ performed by the users.
147. Security breaches can yield a database whose integrity is either _____ or corrupted.
148. Backups must be clearly _____ through detailed descriptions and date information, assuring that the correct backup is used to recover the database.
149. A database object is basically any object created by _____, such as tables, views, indexes, stored procedures, and triggers.
150. An Oracle installation typically yields a menu bar that displays the primary database _____ tools.

Essay

151. What is Character data?
152. Describe date attributes, and its storage.
153. What is a consistent database?
154. What are the object-oriented environment attributes?
155. Explain timespan.