

SQL DATABASE FUNDAMENTALS (345)

REGIONAL – 2017

TOTAL POINTS _____ (500 points)

Failure to adhere to any of the following rules will result in disqualification:

- 1. Contestant must hand in this test booklet and all printouts. Failure to do so will result in disqualification.**
- 2. No equipment, supplies, or materials other than those specified for this event are allowed in the testing area. No previous BPA tests and/or sample tests or facsimile (handwritten, photocopied, or keyed) are allowed in the testing area.**
- 3. Electronic devices will be monitored according to ACT standards.**

No more than sixty (60) minutes testing time

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Identify the letter of the choice that best completes the statement or answers the question. Mark A if the statement is True. Mark B if the statement is False.

1. Keys may include:
 - a. unique secondary keys
 - b. primary keys
 - c. nonunique secondary keys
 - d. all of the above

2. The term set refers to all records that have the same:
 - a. nonunique secondary key
 - b. unique secondary key
 - c. primary key
 - d. B and C

3. Which of the following is *true* about making changes to the database structure?
 - a. If the database is properly designed, changes should not be necessary throughout the system's lifetime.
 - b. Formal policies and procedures for requesting a change are not used because they are too limiting.
 - c. Documentation of when the change was made, how it was made, and why it was made must be created.
 - d. Changes do not produce unexpected results because the DBA will have investigated the change thoroughly before implementing it.

4. Which of the following is *true* about indexes in SQL Server?
 - a. SQL Server does not automatically create indexes for foreign keys.
 - b. SQL Server automatically creates indexes for columns appearing in WHERE clauses in queries.
 - c. SQL Server pads all indexes.
 - d. SQL Server supports filling up to a limit of 70 percent.

5. Measures that are taken to prevent one user's work from inappropriately influencing another user's work are called:
 - a. interleaving
 - b. concurrency control
 - c. database logging
 - d. database recovery

6. A series of actions to be taken on the database such that either all actions are completed successfully, or none of them can be completed, is known as a:
 - a. lock
 - b. log
 - c. checkpoint
 - d. transaction

7. Recovering a database via reprocessing involves:
 - a. recreating the database by reentering all of the data from the beginning, and then reprocessing all of the transactions
 - b. restoring the database from the save and reprocessing all the transactions since the save
 - c. restoring the database from the save and reapplying all the changes made by transactions since the save
 - d. undoing the changes made by erroneous or partially processed transactions and restarting the valid transactions that were in process at the time of the failure

8. The language available in SQL Server that adds programming constructs to the SQL language is known as _____.
 - a. TRANSACT-SQL
 - b. INTERACT-SQL
 - c. C++
 - d. SQLP

9. SQL Server user variables and parameters start with the symbol _____.
 - a. ##
 - b. /*
 - c. #
 - d. @

10. Using only SQL Server tools, you can enter data into a table by _____.
 - a. entering it into a table grid in the Microsoft SQL Server Management Studio
 - b. using INSERT statements through the Microsoft SQL Server Management Studio
 - c. using an SQL Server form
 - d. A or B

11. In UML, an attribute preceded by a(n) _____ is "protected."
 - a. #
 - b. !
 - c. -
 - d. +

12. Anytime you want to use an SQL Server reserved word as a user identifier, enclose it in _____.
 - a. { }
 - b. " "
 - c. []
 - d. < >

13. Which of the following is a component of a computer-based information system?
 - a. hardware
 - b. data
 - c. software
 - d. all of the above

14. Database redesign is fairly easy when _____.
- good backups of the database are available
 - the design was done correctly the first time
 - information systems and organizations influence each other
 - there is no data in the database
15. In a correlated subquery of a database that has tables TableOne and TableTwo, if table TableOne is used in the upper SELECT statements, then which table is used in the lower SELECT statement?
- TableOne
 - TableTwo
 - both TableOne and TableTwo
 - either TableOne or TableTwo
16. SQL queries that use EXISTS and NOT EXISTS are _____.
- constraint independent subqueries
 - normal subqueries
 - uncorrelated subqueries
 - correlated subqueries
17. When running an SQL query that uses NOT EXISTS, the NOT EXISTS keyword will be true if _____.
- no row in the subquery meets the condition
 - any row in the subquery meets the condition
 - all rows in the subquery fail to meet the condition
 - all rows in the subquery meet the condition
18. To change a table name, _____.
- create a new table, move the data, and drop the old table
 - use the SQL ALTER TABLENAME command
 - use the SQL MODIFY TABLENAME command
 - use the SQL RENAME TABLE command
19. If a DEFAULT constraint is included when a new column is added to a table, the default value is applied to _____.
- all existing rows at the time the column is added
 - all new rows but only after the UPDATE command is issued
 - all new rows
 - A and B
20. Which of the following are difficulties when changing the maximum cardinality from 1:1 to 1:N?
- preserving the existing relationships
 - preserving the existing data
 - preserving the existing tables
 - A and B

21. If the table PRODUCT has a column PRICE that has the data type Numeric (8,2), the value 12345 will be displayed by the DBMS as _____.

- a. 123.45
- b. 12345
- c. 00012345
- d. 12345.00

22. Which SQL keyword is used to impose restrictions on a table, data or relationship?

- a. SELECT
- b. SET
- c. CONSTRAINT
- d. ALTER

23. Which of the following is *not* a way of defining a primary key?

- a. CREATE TABLE CUSTOMER

```
(  
    CustomerID Integer Primary Key  
    LastName Char(35) Not Null  
    First Name Char(25) Null  
);
```

- b. CREATE TABLE CUSTOMER

```
(  
    CustomerID Integer Not Null  
    LastName Char(35) Not Null  
    First Name Char(25) Null  
);
```

```
ALTER TABLE CUSTOMER  
ADD CONSTRAINT CustomerPK PRIMARY KEY (CustomerID);
```

- c. CREATE TABLE CUSTOMER

```
(  
    CustomerID Integer Not Null  
    LastName Char(35) Not Null  
    First Name Char(25) Null  
CONSTRAINT CustomerPK PRIMARY KEY (CustomerID)  
);
```

- d. CREAT TABLE CUSTOMER

```
(  
    CustomerID Integer Not Null  
    LastName Char(35) Not Null  
    First Name Char(25) Null  
DEFINE CustomerPK PRIMARY KEY (CustomerID)
```

24. Which SQL keyword is used to change the structure, properties or constraints of a table?
- ALTER
 - CREATE
 - SET
 - CONSTRAINT
25. Which SQL keyword is used to delete a table's structure?
- DROP
 - ALTER
 - DISPOSE
 - DELETE
26. Which SQL keyword is used to add one or more rows of data to a table?
- SELECT
 - SET
 - INSERT
 - UPDATE
27. Which SQL keyword is used to change one or more rows in a table?
- CHANGE
 - MODIFY
 - SELECT
 - UPDATE
28. SQL contains an SQL command TRUNCATE TABLENAME that can be used to remove all rows from the table.
- True
 - False
29. SQL contains an SQL command RENAME TABLENAME that can be used to change table names.
- True
 - False
30. The SQL CREATE TABLE statement is used to name a new table and describe the table's columns.
- True
 - False

31. Based on the tables below, which of the following SQL statements would increase the balance of the Gonzales account by \$100 to a total of \$450?

GENERAL SALES DATABASE:

SALESREP

SalesRepNo	RepName	HireDate
654	Jones	01/02/2005
734	Smith	02/03/2007
345	Chen	01/25/2004
434	Johnson	11/23/2004

CUSTOMER

CustNo	CustName	Balance	SalesRepNo
9870	Winston	500	345
8590	Gonzales	350	434
7840	Harris	800	654
4870	Miles	100	345

- a. INSERT INTO CUSTOMER VALUES (450)
SELECT Balance
WHERE CustName = 'Gonzales';
 - b. INSERT INTO CUSTOMER VALUES PLUS (100)
SELECT Balance
WHERE CustName = 'Gonzales';
 - c. SELECT Gonzales
FROM CUSTOMER
INSERT VALUES (450) INTO Balance;
 - d. UPDATE CUSTOMER
SET Balance = 450
WHERE CustName = 'Gonzales';
32. SQL views are used _____.
- a. to show results of computed columns
 - b. to hide columns
 - c. to hide complicated SQL statements
 - d. SQL views are used for all of the above
33. A stored program that is attached to a table or view is called a _____.
- a. stored procedure
 - b. CHECK constraint
 - c. view
 - d. trigger

34. Which of the following is a SQL trigger Microsoft SQL Server supports?
- BEFORE
 - AFTER
 - INSTEAD OF
 - B and C only

35. What does the following SQL statement do?

```
UPDATE Product_T  
SET Unit_Price = 775  
WHERE Product_ID = 7
```

- Changes the price of a unit called Product_T to 7
 - Updates the Product_T table to have a unit price of 775
 - Changes the unit price of Product 7 to 775
 - Changes the length of the Unit_Price field to 775
36. Stored procedures have the advantage of _____.
- SQL optimized by the DBMS compiler
 - greater security
 - decreased network traffic
 - all of the above
37. Which of the following is not a step in the database design process?
- select primary keys
 - represent relationships
 - create tables and columns from entities and attributes
 - create constraints and triggers
38. Each attribute of an entity becomes a(n) _____ of a table.
- column
 - primary key
 - alternate key
 - foreign key
39. The ideal primary key is _____.
- numeric
 - short
 - fixed
 - all of the above
40. When representing a 1:1 relationship in a relational database design, _____.
- the key of both tables must be the same
 - the key of either table may be placed as a foreign key into the other
 - the key of each table must be placed as foreign keys into the other
 - the intersection table gets the key from both relations

41. To represent a one-to-many relationship in a relational database design, _____.
- the key of the parent is placed as a foreign key into the child
 - the key of the child is placed as a foreign key into the parent
 - an intersection table must be created
 - the keys of both tables are joined into a composite key
42. In many-to-many relationships in a relational database design, _____.
- the key of the child is placed as a foreign key into the parent
 - the keys of both tables are placed in a third table
 - the keys of both tables are joined into a composite key
 - none of the above
43. Recursive relationships can have which of the following maximum cardinalities?
- N:M
 - 1:1
 - 1:N
 - all of the above
44. Anomalies caused by functional dependencies can be eliminated by putting tables into _____.
- 3NF
 - BCNF
 - 2NF
 - 4NF
45. What does the SQL clause ORDER BY CustomerLastName DESC do?
- orders the customers by last name A-Z
 - orders the customers by the number of characters in the last name
 - orders the customers by last name Z-A
 - none of the above
46. Which of the following represents the set that would be returned by the SQL clause?
- WHERE Quantity BETWEEN 30 AND 35
- 32,32,33,34
 - 30,31,32,33,34,35
 - 30,35
 - None of the above
47. The acronym DBMS stands for Database Management Service.
- True
 - False

48. The identifier of the entity becomes the _____ of the corresponding table.
- a. supertype
 - b. subtype
 - c. foreign key
 - d. primary key
49. The industry standard supported by all major DBMSs that allows tables to be joined together is called _____.
- a. Relational Query Language (RQL)
 - b. Sequential Query Language (SQL)
 - c. Structured Question Language (SQL)
 - d. Structured Query Language (SQL)
50. What would be the effect of this UPDATE statement?

```
UPDATE Customer  
SET CustomerLastName ='Smith'
```

- a. it would have no effect
- b. it would change one customer's last name to Smith
- c. it would change every customer's last name to Smith
- d. none of the above