

Member ID: _____

Time: _____

Rank: _____



SQL DATABASE FUNDAMENTALS (345)

REGIONAL 2023

Multiple Choice:

50 @ 2 points each

_____ (100 points)

Test Time: 60 minutes

GENERAL GUIDELINES:

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

1. Member must hand in this test booklet and all printouts if any. 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 (handwritten, photocopied, or keyed) are allowed in the testing area.
3. Electronic devices will be monitored according to ACT standards.

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

1. If a field has a NULL value in an SQL database, it contains _____.
 - A. a zero
 - B. no value
 - C. a single space
 - D. the word NULL
2. Given the field name address, “_____” would check for the field to not be NULL.
 - A. address IS NOT NULL
 - B. address <> NULL
 - C. address != NULL
 - D. address NOT NULL
3. In what decade did SQL become an ANSI and ISO standard?
 - A. 1960s
 - B. 1970s
 - C. 1980s
 - D. 1990s
4. Another name for a record in a database table would be, _____.
 - A. a column
 - B. a row
 - C. a field
 - D. an entry
5. Which command below would gather all fields from a table named Customers.
 - A. SELECT * FROM Customers
 - B. QUERY fields FROM Customers
 - C. EXTRACT field1 – fieldx FROM Customers
 - D. SELECT Customers.*
6. The keyword to gather only unique records from a database table would be _____.
 - A. UNIQUE
 - B. NO_DUPS
 - C. EXCLUSIVE
 - D. DISTINCT

7. What output would the following query produce – SELECT 8*8?
 - A. No result
 - B. 8 repeated 8 times
 - C. 64
 - D. 88

8. Which of the following key words would sort output based on field1 alphabetically from A-Z?
 - A. ORDER BY field1
 - B. SORT ON field1
 - C. SORT ON field1 ASC
 - D. ORDER BY field1 A-Z

9. What does SQL stand for?
 - A. Sequential Query Language
 - B. Searchable Query Language
 - C. Standard Querying Language
 - D. Structured Query Language

10. Which keyword is used to add data to an SQL database?
 - A. SELECT
 - B. ADD
 - C. UPDATE
 - D. INSERT

11. SQL provides a way to do pattern searches in a where clause using the _____ keyword.
 - A. LIKE
 - B. AS
 - C. PATTERN
 - D. EQUALS

12. To find all records where field1 is greater than or equal to 100 and less than or equal to 200 the where clause would be “WHERE _____”.
 - A. field1 between 100 and 200
 - B. field1 >= 100 or field1 <= 200
 - C. field1 in (100, 200)
 - D. field1 >100 and field1 <200

13. To assign a new name to a column during a query you would create an alias for the column using the _____ keyword.
- A. ALIAS
 - B. AS
 - C. RENAME
 - D. TEMP
14. “_____” will make a new database named Customers.
- A. CREATE DATABASE Customers;
 - B. MAKE DATABASE Customers;
 - C. INITIALIZE DB Customers;
 - D. NEW Customers;
15. A basic statement to add data to a database table would be “_____”.
- A. ADD TO table_name (list_of_values);
 - B. UPDATE table_name ADD (list_of_columns) VALUES (list_of_values);
 - C. INSERT INTO table_name (list_of_columns) VALUES (list_of_values);
 - D. CREATE RECORDS (list_of_columns) (list_of_values);
16. _____ are aggregate functions in SQL.
- A. CREATE, MODIFY, and INSERT
 - B. DELETE, UPDATE, and INSERT
 - C. SUM, AVG, and MAX
 - D. SELECT, WHERE, and JOIN
17. _____ is the keyword used to modify table data in an SQL database.
- A. MODIFY
 - B. ALTER
 - C. UPDATE
 - D. CHANGE
18. The statement “_____” would determine how many records are in an SQL table.
- A. COMPUTE (*)
 - B. TABULATE (*)
 - C. COUNT (*)
 - D. ENUMERATE (*)
19. To represent the intersection of two tables in SQL you would use a(n) _____ join.
- A. INTERSECTION
 - B. INNER
 - C. SET
 - D. INCLUSIVE

20. When creating a new table, a primary key can be overwritten, but is automatically assigned.
- A. True
 - B. False
21. A primary key is _____.
A. one or more fields that uniquely identifies a row
B. always a single field that uniquely identifies a row
C. a field named id that is added to every table
D. required in each table for the UPDATE command to work properly
22. A primary key _____.
A. should be on unique fields such as first_name concatenated with last_name
B. should be on a field or group of fields that can't be changed
C. should always be on a numeric field for efficiency
D. should be tied to business logic
23. A foreign key is _____.
A. a field in one table that is related to a field in another table
B. a field or collection of fields that represents uniqueness in a table
C. a field or collection of fields in one table, that refers to the primary key in another table
D. a primary key in a child table
24. A(n) _____ is added to a table to allow quicker searches when querying.
A. primary key
B. constraint
C. auto increment
D. index
25. What is the numeric range of a 4-byte integer in SQL?
A. -9,223,372,036,854,775,808 to 9,223,372,036,854,775,807
B. -2,147,483,648 to 2,147,483,647
C. -32,768 to 32,767
D. 0 to 4,294,967,295
26. A pictorial representation of data that describes how data is communicated and related to each other is called a(n) _____.
A. ER-Diagram
B. Database Schema
C. Table Model
D. Design Document

27. Which of the answers below is NOT an example of a database relationship type?
- A. Many-to-many
 - B. One-to-one
 - C. Few-to-many
 - D. Many-to-one
28. A single name comment in SQL is represented by which of the follow symbols?
- A. --
 - B. **
 - C. <!--
 - D. /*
29. “_____” will delete all records from the Customers table where the first_name starts with a ‘T’.
- A. DELETE * FROM Customers WHERE first_name = 'T%'
 - B. DELETE FROM Customers WHERE SUBSTRING(first_name, 1, 1) = 'T'
 - C. DELETE * FROM Customers WHERE first_name like 'T%'
 - D. DELETE FROM Customers WHERE BEGINS(first_name) = 'T'
30. Which select statement would get the average of the cost field from mytable?
- A. SELECT SUM(cost) / COUNT(*) FROM mytable
 - B. SELECT AVERAGE(cost) FROM mytable
 - C. SELECT AVG() FROM mytable
 - D. SELECT SUM(cost) / MAX(cost) FROM mytable
31. A(n) _____ clause is used to combine rows from two or more tables
- A. INNER
 - B. MERGE
 - C. GROUP BY
 - D. JOIN
32. “SELECT continent, SUM(population) FROM area GROUP by continent” would result in _____.
- A. a sorted list of continents from the area table
 - B. one row with the total population of the area table
 - C. an indeterminate amount of rows from the area table
 - D. one row for every unique continent in the area table
33. When using a GROUP BY statement an ORDER BY ASC statement is not necessary because GROUP BY returns the data in ascending alphabetical order.
- A. True
 - B. False

34. When creating a new table, the _____ keyword is an option to set the initial value of a field.
- A. DEFAULT
 - B. INITIAL
 - C. IS
 - D. BEGIN
35. Standard normalization in DBMS is broken down into _____ normal forms.
- A. 3
 - B. 4
 - C. 5
 - D. 6
36. Which of the following is not a valid type of Database Key?
- A. Super
 - B. Composite
 - C. Aligned
 - D. Alternate
37. A database _____ is a virtual table created to present data from one or more tables to the database user.
- A. temp table
 - B. virttable
 - C. view
 - D. display
38. A _____ is a query nested inside a larger query
- A. union
 - B. subquery
 - C. join
 - D. view
39. Combining the results of two separate queries joined together would be a _____.
- A. union
 - B. subquery
 - C. join
 - D. view
40. A(n) _____ is the complete set of rows that is returned by a SELECT statement.
- A. table
 - B. query
 - C. schema
 - D. result set
41. In the context of a relational database, a(n) _____ is equivalent to one row.

- A. attribute
- B. tuple
- C. constraint
- D. index

42. The _____ command creates a spot within a transaction where the process can be rolled back.

- A. COMMIT
- B. SET TRANSACTION
- C. ROLLBACK
- D. SAVEPOINT

43. What is wrong with the following query?

```
SELECT a.fld1, b.fld1, fld2, fld3 | fld4 AS theTruth
FROM tbl1 a
INNER JOIN tbl2 b on a.id = b.id
HAVING fld1 > fld2
```

- A. Cannot use a HAVING clause without a GROUP BY
- B. HAVING clauses does not support aggregate functions
- C. fld1 is ambiguous in the HAVING clause
- D. Should have two “|” pipe characters for an OR statement

44. The following query has a syntax error; how would you change the query to get it to run?

```
SELECT CONCAT(a.fld1, b.fld1), fld2 AS theOther
FROM tbl1 a
INNER JOIN tbl2 b on a.id = tbl2.id
HAVING fld1 like "%A%"
```

- A. Change replace a.id = tbl2.id with a.id = b.id
- B. Replace HAVING with WHERE
- C. Capitalize the word “like”
- D. Add an alias to the CONCAT() function

45. _____ is the process of organizing a database to reduce redundancy and improve data integrity.
- A. DBMS
 - B. Normalization
 - C. Transaction Processing
 - D. DDL
46. Often new tables are created with an integer field used as a primary key. The value of that key is automatically assigned by the database. What is that property of the field?
- A. Unicode
 - B. Auto increment
 - C. Master count
 - D. Compliment number
47. A _____ is a graphical or textual representation of the structure of a database.
- A. Diagram
 - B. Domain
 - C. Relational Model
 - D. Schema
48. A primary key will always ensure a rows uniqueness.
- A. True
 - B. False
49. Data about data is known as _____.
- A. descriptive data
 - B. master data
 - C. metadata
 - D. XML data
50. A set of logically related database modifications that is written to the database as a unit is known as a _____.
- A. local procedure call
 - B. virtual table
 - C. semaphore
 - D. transaction