

Member ID: _____

Time: _____

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SQL DATABASE FUNDAMENTALS (345)

REGIONAL 2024

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.

Multiple Choice Questions

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

1. What would be the outcome of the following SELECT statement – SELECT (5+5)6 + 1 FROM table;
A. 31
B. 31 repeated for every row in table
C. 70 repeated for every row in table
D. Syntax Error
2. SQL stands for _____.
A. Sequential Query Language
B. Structured Query Language
C. Standard Query Language
D. Semantic Query Library
3. What would be the outcome of the following SELECT statement – SELECT * FROM table WHERE name LIKE "a_%_%";
A. All records that have an 'a' in word
B. All records that have an 'a' in the first position and at least 3 characters
C. All records that have an 'a' in the first, third, and fifth positions of the name
D. All records that have an 'a' in the first, but not the third and fifth positions of the name
4. The SQL function to return the lowest value of a selected column would be _____.
A. SMALL()
B. LOW()
C. BOTTOM()
D. MIN()
5. When used in combination, which of the following logical operators takes precedence?
A. AND
B. OR
C. NOT
D. None (All have equal precedence)

6. An example of an aggregate function in SQL would be _____.
A. COUNT()
B. DISTINCT()
C. FILTER()
D. UPDATE()
7. When querying a database, one would sort the resulting data using which keywords?
A. SORT BY
B. LIMIT
C. ORDER BY
D. RANK BY
8. Which of the following statements will check for a NULL value in field1?
A. SELECT * FROM table1 WHERE field1 IS NULL
B. SELECT * FROM table1 WHERE field1 = ""
C. SELECT * FROM table1 WHERE field1 = NULL
D. SELECT * FROM table1 WHERE EMPTY(field1)
9. To change the contents of a fields value, you would use the _____ statement.
A. MODIFY
B. ALTER
C. UPDATE
D. INSERT
10. To make column names more readable developers often give column names using the keyword _____.
A. IS
B. ALIAS
C. AS
D. USE
11. To restrict how many records are returned from a completed query, one would use a _____.
A. LIMIT clause
B. CAP BY clause
C. SORT BY clause
D. ONLY clause
12. Assuming field1 has a datatype of VARCHAR,
SELECT * FROM table1 WHERE field1 IS NULL is equivalent to
SELECT * FROM table1 WHERE field1 = ""
A. TRUE
B. FALSE

13. The query – SELECT TRUE OR FALSE AND FALSE OR TRUE AND FALSE – will return ____.
- A. 1
 - B. 0
 - C. TRUE
 - D. FALSE
14. Which of the following queries would have a result set where the data is sorted alphabetically (A-Z)
- A. SELECT field1 FROM table SORT BY field1
 - B. SELECT field1 FROM table ORDER BY field1 ASC
 - C. SELECT SORT(field1) FROM table
 - D. SELECT field1 FROM table ORDER(field1)
15. Which of the following statements is NOT true about an alias?
- A. An alias only exists for the duration of a query.
 - B. An alias can be used to make column names more readable.
 - C. An alias will create a temporary table.
 - D. An alias can be mixed case.
16. The query – SELECT name, MAX(field1) FROM table1 – will return the maximum value in field1 ____.
- A. and the corresponding name from the database
 - B. for each name in the database
 - C. and a potentially unrelated name from the database
 - D. and the first name in sort order from the database
17. To get the number of records that meet the criteria of a query, you would use the ____ function.
- A. SUM()
 - B. TOTAL()
 - C. AGGREGATE()
 - D. COUNT()
18. To construct a new table in a database you would use a ____ statement?
- A. BUILD table
 - B. CREATE table
 - C. MAKE table
 - D. CONSTRUCT table

19. Which of the following is not a database type?
- A. Not only SQL
 - B. Distributed
 - C. Compound
 - D. OOP
20. What keyword would be used to add data to a database table?
- A. INSERT
 - B. ADD
 - C. CREATE
 - D. NEW
21. How many rows of data are returned from the following query – SELECT name, MIN(a), AVG(a), MAX(a) FROM table
- A. 1
 - B. 2
 - C. 3
 - D. Depends on how many rows are in the table
22. The effect of using a GROUP BY clause on a Primary Key would ____.
- A. Return an exact data set as it would if you didn't use a GROUP BY
 - B. Return an error
 - C. Return a larger data set than it would if you didn't use a GROUP BY
 - D. Return a smaller data set than it would if you didn't use a GROUP BY
23. What are the advantages of data denormalization?
- A. Saves storage space
 - B. Helps get rid of complex data by saving redundant data
 - C. Provides for much faster queries
 - D. Eases database maintenance
24. The main purpose of a primary key is to ____.
- A. Establish a connection to the database
 - B. Lock a database base record for reading and writing
 - C. Become a focal point for returning records in sorted order
 - D. Uniquely identify a record
25. A database record is equivalent to a ____.
- A. Row in a table
 - B. Column in a table
 - C. A field in a table
 - D. A result set

26. Two queries combined using a UNION statement _____.
A. Will return a dataset with no duplicates
B. Will return a dataset sorted in descending order
C. Will create a temporary cursor
D. Must be made between two tables with equal columns
27. When aggregating data using a GROUP BY statement NULL values are ignored.
A. TRUE
B. FALSE
28. What is the limit of tables that can be joined together in one query?
A. 16
B. 64
C. 256
D. Database dependent
29. A LEFT JOIN would produce _____.
A. All rows from the left table whether it has a matching key in the right table or not
B. All rows from the left table that match the rows in the right table
C. All rows where the keys in both tables match
D. All rows in the left table mapped to all rows in the right table
30. One way to make database queries quicker is to add _____.
A. Foreign Keys
B. A Primary Key
C. An index
D. Triggers
31. A having clause and a where clause are equivalent if a group clause is not used.
A. TRUE
B. FALSE
32. Which of the following is true about an SQL constraint?
A. They are necessary to facilitate cascading deletes
B. They help make joins between tables faster
C. They specify rules for data in a table
D. They ensure a primary key is not a foreign key
33. Which of the following is NOT a type of database key?
A. Surrogate
B. Super
C. Master
D. Alternate

Consider the following three tables for questions 34-40

Movie				MovieActor		Actor		
movieId	title	genreId	genre	movieId	actorId	actorId	name	dob
1	Speed	1	Horror	1	1	1	Bob	1950-01-01
2	Strength	2	War	1	3	2	Sally	1970-05-11
4	Size	4	Drama	1	6	3	Jane	2000-07-12
8	Shape	2	War	2	4	4	Carl	1970-05-11
				2	2	5	Jim	1999-06-01
				8	6	6	Sally	1994-06-24
				8	4			

34. If you delete the record in the Movie table with the movieId of 2, what would the next autoincremented value be?

- A. 2
- B. 3
- C. 5
- D. 9

35. How many rows would be created from the following query?

SELECT movieId FROM Movie WHERE movieId in (SELECT movieId FROM Movie)

- A. None
- B. 4
- C. 8
- D. 16

36. What would be the result of the following query?

SELECT name, MAX(dob) FROM Actor

- A. Bob, 2000-07-12
- B. Jane, 2000-07-12
- C. Sally, 2000-07-12
- D. Can not determine which name would be returned

37. How many joins would it take to find out how many actors were in the movie named "Speed"

- A. 0
- B. 1
- C. 2
- D. 3

38. How many rows would be returned from the following query
SELECT COUNT(*) FROM Actor GROUP BY name
- A. 0
 - B. 1
 - C. 5
 - D. 6
39. What type of table is the MovieActor table?
- A. Mapping
 - B. System
 - C. Temporary
 - D. User-Defined
40. How would you get a list of all names that contained an 'a'?
- A. SELECT * FROM Actor WHERE name CONTAINS("a")
 - B. SELECT * FROM Actor WHERE name == "%a"
 - C. SELECT * FROM Actor WHERE name LIKE "%a%"
 - D. SELECT * FROM Actor WHERE name HAS "a"
41. What command would you use to create an index on a table.
- A. CREATE INDEX
 - B. ALTER TABLE
 - C. NEW INDEX
 - D. BUILD INDEX
42. The datatype to store variable length string data is ____.
- A. String
 - B. Char
 - C. Text
 - D. Varchar
43. An example of a nonrelational database would be
- A. MongoDB
 - B. PostgreSQL
 - C. MariaDB
 - D. Azure
44. Traditionally DBAs would not be responsible for ____.
- A. Data Integrity
 - B. Data Security
 - C. Database Recovery
 - D. Creation of Stored Procedures

45. Which of the following is true about an SQL trigger?
- A. They are necessary to facilitate cascading deletes
 - B. They help make joins between tables faster
 - C. They specify rules for data in a table
 - D. They ensure a primary key is not a foreign key
46. A Database Tuple ____.
- A. Describes the relationship between fields in a table
 - B. Is a database row
 - C. Is the collection of Key types on a table
 - D. Describes the rules of joining two tables
47. A representation of the structure of a database is a ____.
- A. Semaphore
 - B. Scalar Function
 - C. Schema
 - D. Stack
48. One or more columns from a table that match the primary key in a referenced table is known as a ____.
- A. Reference Key
 - B. Super Key
 - C. Composite Key
 - D. Foreign Key
49. The syntax to get unique results from a query would be – SELECT ____ field1 FROM table1.
- A. ONLY
 - B. UNIQUE
 - C. DISTINCT
 - D. NARROW
50. What would the result of the following query?
- SELECT field1, field2 FROM table1 GROUP BY field1 HAVING MAX(count) > 3
- A. All fields rolled up by field1 where there are more than 3 field2 records per field1
 - B. All fields rolled up by field1 where the field named “count” is greater than 3
 - C. All fields rolled up by field1 where there are there are 3 or more field1 records per field one
 - D. Syntax Error