Questions

1) Which of the following is not a type of database model?
   a. Relational database model
   b. Network database model
   c. Hierarchical database model
   d. Linear database model

2) Which of the following is not a component of the ACID properties of a transaction?
   a. Atomicity
   b. Consistency
   c. Isolation
   d. Durability

3) Which of the following SQL statements is used to add a new record to a table?
   a. INSERT INTO
   b. UPDATE
   c. DELETE
   d. SELECT

4) Which of the following is not a type of database index?
   a. B-Tree index
   b. Bitmap index
   c. Hash index
   d. Heap index

5) Which of the following is not a type of database constraint?
   a. Primary key constraint
   b. Foreign key constraint
   c. Unique key constraint
   d. Partition key constraint

6) Which of the following is not a characteristic of a relational database?
   a. Data is stored in tables
   b. Tables are related through keys
   c. Data is stored in a hierarchical structure
   d. Each column in a table has a unique name

7) Which of the following is not a type of SQL join?
   a. Inner join
   b. Outer join
   c. Full join
   d. Cross join

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8) Which of the following is not a function of a database management system?
   a. Data storage
   b. Data retrieval
   c. Data analysis
   d. Data processing

9) Which of the following is not a type of database backup?
   a. Full backup
   b. Differential backup
   c. Incremental backup
   d. Relational backup

10) Which of the following is not a type of database normalization?
   a. First normal form (1NF)
   b. Second normal form (2NF)
   c. Third normal form (3NF)
   d. Fourth normal form (4NF)

11) Which of the following is not a SQL data type?
   a. INTEGER
   b. VARCHAR
   c. BOOLEAN
   d. CHARACTER

12) Which of the following SQL statements is used to modify existing records in a table?
   a. INSERT INTO
   b. UPDATE
   c. DELETE
   d. SELECT

13) Which of the following is not a benefit of using a database management system?
   a. Improved data sharing
   b. Increased data security
   c. Reduced data redundancy
   d. Decreased data availability

14) Which of the following is not a type of database schema?
   a. Physical schema
   b. Logical schema
   c. External schema
   d. Relational schema

15) Which of the following is not a type of database query language?
   a. Structured Query Language (SQL)

b. Data Manipulation Language (DML)

c. Data Definition Language (DDL)

d. Programming Language (PL)

16) Which of the following is not a database model?
   a. Relational model
   b. Hierarchical model
   c. Network model
   d. Linear model

17) Which of the following is not a SQL aggregate function?
   a. AVG
   b. SUM
   c. MAX
   d. SORT

18) Which of the following is not a type of database constraint?
   a. NOT NULL
   b. UNIQUE
   c. CHECK
   d. CASCADE

19) Which of the following is not a type of database index?
   a. B-tree index
   b. Hash index
   c. Bitmap index
   d. Relational index

20) Which of the following is not a join type in SQL?
   a. INNER JOIN
   b. OUTER JOIN
   c. CROSS JOIN
   d. UNION JOIN

21) Which of the following is not a property of a relation in the relational data model?
   a. Atomicity
   b. Consistency
   c. Integrity
   d. Normalization

22) Which of the following is not a transaction property in a DBMS?
   a. Atomicity
   b. Consistency
   c. Durability
   d. Concurrency

23) Which of the following is not a type of database backup?
   a. Full backup
   b. Incremental backup
   c. Differential backup
   d. Random backup

24) Which of the following is not a type of SQL constraint?
   a. PRIMARY KEY
   b. FOREIGN KEY

c. DEFAULT

d. INDEX

25) In SQL, what is the difference between the HAVING and WHERE clauses?

    a. HAVING is used for grouping results while WHERE is used for filtering rows.

    b. WHERE is used for grouping results while HAVING is used for filtering rows.

    c. Both clauses are used for filtering rows, but HAVING is used with aggregate functions.

    d. Both clauses are used for grouping results, but WHERE is used with aggregate functions.

26) Which of the following is not a type of database schema?

    a. Physical schema

    b. Logical schema

    c. External schema

    d. Conceptual schema

27) Which of the following is not a type of SQL subquery?

    a. Scalar subquery

    b. Correlated subquery

    c. Nested subquery

    d. Circular subquery

28) Which of the following is not a type of database normalization?

    a. First normal form (1NF)

    b. Second normal form (2NF)

    c. Third normal form (3NF)

    d. Fourth normal form (4NF)

29) Which of the following is not a type of database constraint?

    a. FOREIGN KEY

    b. PRIMARY KEY

    c. DEFAULT

    d. TABLE KEY

30) What is the purpose of a database index?

    a. To store data in a compressed format

    b. To speed up data retrieval

c. To enforce data integrity
d. To provide an additional layer of security

31) Which of the following is not a type of SQL query?
a. SELECT
b. INSERT
c. DELETE
d. UPDATE

32) In the relational data model, what is a foreign key?
a. A primary key of another table
b. A unique identifier of a table
c. A field that can store multiple values
d. A field that establishes a relationship between tables

33) Which of the following is not a type of database management system?
a. Hierarchical database management system
b. Relational database management system
c. Network database management system
d. Object-oriented database management system

34) Which of the following is not a type of SQL join?
a. INNER JOIN
b. OUTER JOIN
c. CROSS JOIN
d. ALL JOIN

35) What is a transaction in a database?
a. A group of related tables
b. A logical unit of work performed on a database
c. A way to store data in a compressed format
d. A type of data constraint

36) What is the purpose of normalization in database design?
a. To reduce data redundancy and

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improve data integrity

b. To store data in a compressed format

c. To speed up data retrieval

d. To provide an additional layer of security

37) What is the difference between a primary key and a foreign key in a database?

   a. A primary key uniquely identifies a record, while a foreign key is used to establish relationships between tables.

   b. A primary key is a field in a table that stores multiple values, while a foreign key is a field that stores a single value.

   c. A primary key is used to store large binary objects, while a foreign key is

used to store text data.

d. A primary key and a foreign key are the same thing in a database.

38) Which of the following is not a type of database constraint?

   a. NOT NULL
   b. UNIQUE
   c. DEFAULT
   d. GROUP BY

39) What is the purpose of a view in a database?

   a. To store data in a compressed format

   b. To provide an additional layer of security

   c. To speed up data retrieval

   d. To present a customized or filtered view of data from one or more tables

40) What is a join in a database?

   a. A data constraint used to ensure data consistency

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b. A way to insert new data into a table

c. A way to combine data from two or more tables based on a common field

d. A way to delete data from a table

41) What is the purpose of a transaction log in a database?

a. To store a backup of the entire database

b. To track all changes made to the database

c. To store user credentials for database access

d. To provide an additional layer of security

42) What is the purpose of a primary key in a database table?

a. To ensure data consistency

b. To provide a unique identifier for each row in the table

c. To store large amounts of data

d. To speed up data retrieval

43) What is the difference between a clustered index and a non-clustered index?

a. A clustered index is sorted in ascending order, while a non-clustered index is sorted in descending order

b. A clustered index stores the actual data rows of the table, while a non-clustered index stores only the index data

c. A clustered index is used for searching and sorting, while a non-clustered index is used for data retrieval

d. There is no difference between a clustered index and a non-clustered index

44) What is a foreign key in a database table?
   a. A key that is used to identify a unique row in the table
   b. A key that is used to reference another table
   c. A key that is used to speed up data retrieval
   d. A key that is used to store large amounts of data

45) Which of the following is not a type of database constraint?
   a. Primary key constraint
   b. Foreign key constraint
   c. Data type constraint
   d. Security constraint

46) What is normalization in a database?
   a. A process of organizing data in a database to eliminate redundancy and improve data integrity
   b. A process of backing up the entire database
   c. A process of optimizing the database for speed
   d. A process of encrypting sensitive data in the database

47) What is the purpose of a view in a database?
   a. To provide a logical representation of data from one or more tables
   b. To store frequently accessed data for fast retrieval
   c. To enforce referential integrity between tables
   d. To store intermediate results of complex queries

48) Which of the following is not a property of a transaction in a database?
   a. Atomicity
   b. Consistency

c. Isolation
d. Durability

49) **What is a stored procedure in a database?**
   a. A group of SQL statements that can be executed as a single unit
   b. A table that stores the results of a query
   c. A constraint that ensures data is unique within a column
   d. A view that combines data from multiple tables

50) **Which of the following statements about the ACID properties of transactions is false?**
   a. Atomicity ensures that a transaction is executed completely or not at all
   b. Consistency ensures that a transaction brings the database from one valid state to another

   c. Isolation ensures that a transaction's effects are not visible to other transactions until it is completed
   d. Durability ensures that the effects of a committed transaction persist even if there is a system failure

51) **What is a database index?**
   a. A physical file that stores the actual data rows of a table
   b. A logical structure that speeds up data retrieval by providing quick access to specific rows of a table
   c. A table that stores only the index data of a table
   d. A constraint that ensures data is unique within a column

52) Which of the following is
not a type of database
model?
   a. Relational
   b. Hierarchical
   c. Network
   d. Object-Oriented
53) What is a primary key in a
database?
   a. A column or set
      of columns that
      uniquely
      identifies each
      row in a table
   b. A column that can
      contain only
      unique values
   c. A column that
      stores the results
      of a query
   d. A constraint that
      ensures data is
      unique within a
      column
54) What is normalization in a
database?
   a. The process of
      breaking down a
      database into
      smaller, more
      manageable
      tables
   b. The process of
      combining tables

into larger, more
      complex tables
   c. The process of
      creating a backup
      copy of a
      database
   d. The process of
      creating indexes
      on columns for
      faster data
      retrieval
55) Which of the following is
not a benefit of using a
database management
system (DBMS)?
   a. Increased data
      consistency and
      integrity
   b. Improved data
      security
   c. Simplified data
      access and
      retrieval
   d. Decreased
      storage capacity
      required for data
56) What is a foreign key in a
database?
   a. A column or set
      of columns that
      uniquely
      identifies each
      row in a table

b. A column that can contain only unique values

c. A column that stores the results of a query

d. A column that references the primary key of another table

57) Which normal form eliminates repeating groups in a table?

a. First Normal Form (1NF)

b. Second Normal Form (2NF)

c. Third Normal Form (3NF)

d. Fourth Normal Form (4NF)

58) Which normal form eliminates transitive dependencies in a table?

a. First Normal Form (1NF)

b. Second Normal Form (2NF)

c. Third Normal Form (3NF)

d. Fourth Normal Form (4NF)

59) Which normal form eliminates multi-valued dependencies in a table?

a. First Normal Form (1NF)

b. Second Normal Form (2NF)

c. Third Normal Form (3NF)

d. Fourth Normal Form (4NF)

60) In which normal form is a table guaranteed to be free from all anomalies?

a. First Normal Form (1NF)

b. Second Normal Form (2NF)

c. Third Normal Form (3NF)

d. Fourth Normal Form (4NF)

61) Which normal form is rarely used in practice?

a. Fifth Normal Form (5NF)

b. Sixth Normal Form (6NF)

c. Seventh Normal Form (7NF)

d. Eighth Normal Form (8NF)

62) Which normal form requires that every determinant in a table is a candidate key?

a. First Normal Form (1NF)

b. Second Normal Form (2NF)

c. Third Normal Form (3NF)

d. Fourth Normal Form (4NF)

63) Which normal form is a higher level of normalization than Fourth Normal Form (4NF)?

a. Fifth Normal Form (5NF)

b. Sixth Normal Form (6NF)

c. Seventh Normal Form (7NF)

d. Eighth Normal Form (8NF)

64) Which normal form allows only one-to-one relationships between tables?

a. First Normal Form (1NF)

b. Second Normal Form (2NF)

c. Third Normal Form (3NF)

d. Fourth Normal Form (4NF)

65) Which normal form allows only one-to-many relationships between tables?

a. First Normal Form (1NF)

b. Second Normal Form (2NF)

c. Third Normal Form (3NF)

d. Fourth Normal Form (4NF)

66) Which normal form requires that there are no transitive dependencies or partial dependencies in a table?

a. First Normal Form (1NF)

b. Second Normal Form (2NF)

c. Third Normal Form (3NF)

d. Fourth Normal Form (4NF)

67) Which normal form allows only atomic values and no repeating groups or arrays of data?

a. First Normal Form (1NF)

b. Second Normal Form (2NF)

c. Third Normal Form (3NF)

d. Fourth Normal Form (4NF)

68) Which normal form is based on the concept of transitive dependencies?

    a. First Normal Form (1NF)

    b. Second Normal Form (2NF)

    c. Third Normal Form (3NF)

    d. Fourth Normal Form (4NF)

69) Which normal form allows non-key attributes to be dependent on other non-key attributes?

    a. First Normal Form (1NF)

    b. Second Normal Form (2NF)

    c. Third Normal Form (3NF)

    d. Fourth Normal Form (4NF)

70) Which normal form requires that every non-key attribute in a table is dependent on the primary key?

    a. First Normal Form (1NF)

    b. Second Normal Form (2NF)

    c. Third Normal Form (3NF)

    d. Fourth Normal Form (4NF)

71) Which normal form allows for the elimination of redundant data by splitting a table into smaller, related tables?

    a. First Normal Form (1NF)

    b. Second Normal Form (2NF)

    c. Third Normal Form (3NF)

    d. Fourth Normal Form (4NF)

72) Which of the following operators in relation algebra returns only those rows that are common to two tables?

    A. Union

    B. Intersection

    C. Difference

    D. Join

73) Which of the following is an example of a valid projection operation in relation algebra?

A. π (Salary > 1000) (Employee)

B. π (Department = "Sales" AND Salary > 5000) (Employee)

C. π (EmployeeName, Department) (Employee)

D. π (Manager IN (SELECT Manager FROM Department WHERE DepartmentName = "Sales")) (Employee)

74) Which of the following is an example of a valid renaming operation in relation algebra?

A. ρ (DepartmentID, DepartmentName) (Department)

B. ρ (Department.DepartmentID, Department.DepartmentName) (Department)

C. ρ (EmployeeName AS Name) (Employee)

D. ρ (SELECT * FROM Department) (Department)

75) Which of the following is an example of a valid difference operation in relation algebra?

    A. R1 ∩ R2
    B. R1 U R2
    C. R1 - R2
    D. R1 × R2

76. Which of the following operators in relation algebra

returns all the rows from two tables, eliminating any duplicates?

a. Union
b. Intersection
c. Difference
d. Join

77. Which of the following is an example of a valid join operation in relation algebra?

a. R1 ⋈ R2
b. R1 ∩ R2
c. R1 - R2
d. R1 × R2

78. Which of the following is an example of a valid full outer join operation in relation algebra?

a. R1 ⋈ R2
b. R1 ∩ R2
c. R1 - R2
d. R1 ⊕ R2

79. Which of the following is an example of a valid division operation in relation algebra?

a. R1 ÷ R2
b. R1 U R2
c. R1 - R2
d. R1 × R2

80. Which of the following is an example of a valid transitive closure operation in relation algebra?

a. R*
b. R1 ⋈ R2
c. R1 - R2

d. R1 × R2

81. Which of the following is an example of a valid grouping operation in relation algebra?
a. γ (EmployeeName, Salary) (Employee)
b. γ (AVG(Salary)) (Employee)
c. γ (Department = "Sales") (Employee)
d. γ (EmployeeName) (Employee)

82. Which of the following is an example of a valid aggregate function in relation algebra?
a. MAX
b. OR
c. NOT
d. UNION

83. Which of the following is an example of a valid rename operation in relation algebra?
a. ρ (EmployeeName, Salary) (Employee)
b. ρ (AVG(Salary)) (Employee)
c. ρ (Department = "Sales") (Employee)
d. ρ (EmployeeName) (Employee)

84. Which of the following is an example of a valid projection operation in relation algebra?
a. π (EmployeeName, Salary) (Employee)
b. π (AVG(Salary)) (Employee)
c. π (Department = "Sales") (Employee)
d. π (EmployeeName) (Employee)

85. Which of the following is an example of a valid selection operation in relation algebra?
a. σ (EmployeeName, Salary) (Employee)
b. σ (AVG(Salary)) (Employee)
c. σ (Department = "Sales") (Employee)
d. σ (EmployeeName) (Employee)

86. Which of the following operators is used to combine two or more conditions in a WHERE clause of a SELECT statement?
a. AND
b. OR
c. NOT
d. XOR

87. Which of the following clauses in the SELECT statement is used to filter rows based on a condition?
a. FROM
b. WHERE
c. SELECT
d. GROUP BY

88. Which of the following operators is used to specify a range of values in a WHERE clause of a SELECT statement?
a. BETWEEN
b. LIKE
c. IN
d. NOT

89. Which of the following operators is used to match a

pattern in a WHERE clause of a SELECT statement?

a. BETWEEN
b. LIKE
c. IN
d. NOT

90. Which of the following clauses in the SELECT statement is used to limit the number of retrieved rows?

a. FROM
b. WHERE
c. SELECT
d. LIMIT

91. Which of the following operators is used to specify multiple values in a WHERE clause of a SELECT statement?

a. BETWEEN
b. LIKE
c. IN
d. NOT

92. Which of the following SQL statements is used to add a new column to an existing table?

a. ALTER TABLE
b. UPDATE
c. DELETE
d. SELECT

93. Which of the following SQL statements is used to modify the structure of an existing table?

a. ALTER TABLE
b. UPDATE
c. DELETE

d. SELECT

94. Which of the following clauses in the SELECT statement is used to group rows based on a condition that is not part of the result set?

a. HAVING
b. WHERE
c. SELECT
d. GROUP BY

95. Which of the following clauses in the SELECT statement is used to retrieve distinct values of a column or columns?

a. DISTINCT
b. WHERE
c. SELECT
d. GROUP BY

96. Which of the following clauses in the SELECT statement is used to calculate the difference between two dates or times?

a. DATEDIFF
b. WHERE
c. SELECT
d. GROUP BY

97. Which of the following SQL statements is used to retrieve the first n rows from a table?

a. SELECT TOP n
b. SELECT n
c. SELECT FIRST n
d. SELECT LIMIT n

98. Which of the following SQL statements is used to delete all rows from a table?
a. DELETE ALL
b. TRUNCATE TABLE
c. DELETE TABLE
d. CLEAR TABLE

99. Which of the following clauses in the SELECT statement is used to create aliases for table or column names?
a. AS
b. WHERE

c. SELECT

d. GROUP BY

100. Which of the following operators is used to check if a value matches one of several values in a WHERE clause of a SELECT statement?

a. BETWEEN

b. LIKE

c. IN

d. EXISTS

ANSWERSHEET

1	D	2	C	3	A	4	D	5	D	6	C	7	D	8	C	9	D
10	D	11	D	12	B	13	D	14	D	15	D	16	D	17	D	18	D
19	D	20	D	21	D	22	D	23	D	24	D	25	A	26	D	27	D
28	D	29	D	30	B	31	D	32	D	33	D	34	D	35	B	36	A
37	A	38	D	39	D	40	C	41	B	42	B	43	B	44	B	45	D
46	A	47	A	48	B	49	A	50	B	51	B	52	D	53	A	54	A
55	D	56	D	57	A	58	C	59	C	60	D	61	C	62	C	63	B
64	A	65	D	66	C	67	A	68	B	69	C	70	C	71	B	72	B
73	C	74	B	75	C	76	A	77	A	78	D	79	A	80	A	81	B
82	A	83	D	84	A	85	C	86	A	87	B	88	A	89	B	90	D
91	C	92	A	93	A	94	A	95	A	96	A	97	A	98	B	99	A
100	C																