

MCQ's IN DBMS

1. What does DBMS stand for?

- a) Data Base Management Software
- b) Database Management System
- c) Data Backup Management System
- d) Data Basic Management Server

Answer: b) Database Management System

Explanation: DBMS stands for Database Management System, which is software for creating and managing databases.

2. Which of the following is not a type of database?

- a) Hierarchical
- b) Network
- c) Relational
- d) Non-Relational

Answer: d) Non-Relational

Explanation: The major database models include hierarchical, network, and relational databases. "Non-relational" is a broad category, but it is not a specific model like the others.

3. Which language is used to query a database?

- a) C++
- b) SQL
- c) HTML
- d) JavaScript

Answer: b) SQL

Explanation: SQL (Structured Query Language) is the standard language used to query and manage databases.

4. Which of the following is a key feature of a relational database?

- a) Tables
- b) Objects

- c) Files
- d) Trees

Answer: a) Tables

Explanation: Relational databases organize data into tables (relations), which consist of rows and columns.

5. What is a primary key in a database?

- a) A column that uniquely identifies each row in a table
- b) A key that can be used multiple times in different tables
- c) A column that can hold duplicate values
- d) A foreign key that links tables together

Answer: a) A column that uniquely identifies each row in a table

Explanation: The primary key is a unique identifier for records in a table and must contain unique values.

6. Which SQL statement is used to retrieve data from a database?

- a) UPDATE
- b) SELECT
- c) DELETE
- d) INSERT

Answer: b) SELECT

Explanation: The `SELECT` statement is used to retrieve data from one or more tables in a database.

7. Which of the following is a valid SQL constraint?

- a) NOT NULL
- b) LOOP
- c) CASE
- d) TRIGGER

Answer: a) NOT NULL

Explanation: Constraints like `NOT NULL` ensure that a column cannot have null values. Others include `UNIQUE`, `PRIMARY KEY`, and `FOREIGN KEY`.

8. Which type of join returns all rows from both tables, including the non-matching rows?

- a) INNER JOIN
- b) LEFT JOIN
- c) RIGHT JOIN
- d) FULL JOIN

Answer: d) FULL JOIN

Explanation: A FULL JOIN returns all rows when there is a match in either table, as well as rows that do not match in both tables.

9. What is the function of the WHERE clause in SQL?

- a) To join multiple tables
- b) To group rows that have the same values
- c) To filter records based on specific conditions
- d) To sort the records

Answer: c) To filter records based on specific conditions

Explanation: The `WHERE` clause is used to filter records that meet a specified condition.

10. Which of the following is an ACID property in DBMS?

- a) Aggregation
- b) Compression
- c) Isolation
- d) Durability

Answer: c) Isolation

Explanation: ACID stands for Atomicity, Consistency, Isolation, and Durability, which are the properties that ensure reliable transaction processing in databases.

11. What is a foreign key in a relational database?

- a) A key that links two tables together
- b) A key that always holds unique values
- c) A primary key in one table
- d) A key that can hold null values

Answer: a) A key that links two tables together

Explanation: A foreign key is used to establish a relationship between two tables by linking the primary key of one table to another.

12. Which command is used to delete all rows from a table in SQL but keep the table structure intact?

- a) DROP
- b) DELETE
- c) TRUNCATE
- d) REMOVE

Answer: c) TRUNCATE

Explanation: `TRUNCATE` removes all rows from a table but keeps the table structure, whereas `DROP` deletes the entire table.

13. Which of the following is an aggregate function in SQL?

- a) COUNT
- b) IF
- c) WHERE
- d) CASE

Answer: a) COUNT

Explanation: Aggregate functions, such as `COUNT`, `SUM`, `AVG`, `MIN`, and `MAX`, perform calculations on a set of values.

14. Which type of database is most commonly used for large, distributed systems like cloud-based applications?

- a) Hierarchical
- b) Network
- c) NoSQL
- d) Relational

Answer: c) NoSQL

Explanation: NoSQL databases are often used for cloud-based and large distributed systems because they handle unstructured and semi-structured data more efficiently.

15. What is the purpose of normalization in a relational database?

- a) To reduce data redundancy and inconsistency
- b) To create more tables
- c) To denormalize data
- d) To optimize queries

Answer: a) To reduce data redundancy and inconsistency

Explanation: Normalization is a process to organize a database to reduce redundancy and improve data integrity.

16. In SQL, what does the GROUP BY clause do?

- a) Joins tables together
- b) Groups rows that have the same values
- c) Sorts the rows of a result set
- d) Filters rows in a query

Answer: b) Groups rows that have the same values

Explanation: The GROUP BY clause groups rows that share the same value into summary rows, often used with aggregate functions.

17. Which of the following is a type of SQL subquery?

- a) Recursive
- b) Nested
- c) Inverted
- d) Transitive

Answer: b) Nested

Explanation: A nested subquery is a query within another SQL query, allowing more complex filtering of data.

18. Which SQL command is used to create a new table?

- a) CREATE
- b) ALTER
- c) INSERT
- d) UPDATE

Answer: a) CREATE

Explanation: The CREATE command is used to create a new table in the database.

19. Which of the following is a NoSQL database?

- a) MySQL
- b) MongoDB

- c) PostgreSQL
- d) Oracle

Answer: b) MongoDB

Explanation: MongoDB is a NoSQL database that stores data in flexible, JSON-like documents rather than tables.

20. What does the JOIN operation do in SQL?

- a) Merges rows from two or more tables
- b) Deletes rows from a table
- c) Groups rows based on a condition
- d) Updates rows in a table

Answer: a) Merges rows from two or more tables

Explanation: A JOIN operation merges rows from multiple tables based on a related column between them.

21. Which of the following is a type of data model in DBMS?

- a) Tabular
- b) Entity-Relationship
- c) File
- d) Pointer

Answer: b) Entity-Relationship

Explanation: The Entity-Relationship (ER) model is a type of data model that represents data relationships using entities and attributes.

22. In a relational database, what is a tuple?

- a) A column
- b) A row
- c) A table
- d) A database

Answer: b) A row

Explanation: A tuple refers to a single row in a table, representing a set of related data.

23. What does DML stand for in the context of SQL?

- a) Data Memory Language
- b) Database Management Language
- c) Data Manipulation Language
- d) Data Mining Language

Answer: c) Data Manipulation Language

Explanation: DML (Data Manipulation Language) includes commands like `INSERT`, `UPDATE`, `DELETE`, and `SELECT` to manipulate data in a database.

24. Which of the following is used to enforce referential integrity between tables?

- a) Foreign Key
- b) Unique Key
- c) Check Constraint
- d) Default Constraint

Answer: a) Foreign Key

Explanation: A foreign key enforces referential integrity by ensuring that the value in a foreign key column

25. Which command in SQL is used to change the structure of an existing table?

- a) UPDATE
- b) ALTER
- c) MODIFY
- d) REBUILD

Answer: b) ALTER

Explanation: The `ALTER` command is used to modify the structure of an existing table, such as adding or dropping columns.

26. What is a database index used for?

- a) To enforce uniqueness
- b) To sort data
- c) To speed up query performance
- d) To insert data into tables

Answer: c) To speed up query performance

Explanation: A database index is used to speed up the retrieval of rows by creating a lookup for specific columns.

27. What does the term "denormalization" mean in database design?

- a) Adding more foreign keys
- b) Reducing the number of tables
- c) Allowing redundancy in data
- d) Removing constraints

Answer: c) Allowing redundancy in data

Explanation: Denormalization is the process of introducing redundancy to improve read performance at the cost of write performance.

28. Which SQL clause is used to sort the result set?

- a) WHERE
- b) ORDER BY
- c) GROUP BY
- d) HAVING

Answer: b) ORDER BY

Explanation: The `ORDER BY` clause is used to sort the result set based on one or more columns.

29. Which of the following is a type of DBMS architecture?

- a) 1-tier
- b) 2-tier
- c) 3-tier
- d) All of the above

Answer: d) All of the above

Explanation: DBMS architectures can be classified into 1-tier, 2-tier, and 3-tier architectures, based on how the user interacts with the system.

30. Which type of join returns only the matching rows between two tables?

- a) FULL JOIN
- b) LEFT JOIN
- c) INNER JOIN
- d) RIGHT JOIN

Answer: c) INNER JOIN

Explanation: An INNER JOIN returns only the rows where there is a match in both tables.

31. Which of the following is a DDL command in SQL?

- a) SELECT
- b) UPDATE
- c) ALTER
- d) DELETE

Answer: c) ALTER

Explanation: Data Definition Language (DDL) commands, like `CREATE`, `ALTER`, and `DROP`, are used to define and modify database structures.

32. What is the purpose of the COMMIT statement in SQL?

- a) To save the changes permanently
- b) To reverse a transaction
- c) To create a new table
- d) To update a record

Answer: a) To save the changes permanently

Explanation: `COMMIT` is used to save all changes made during the current transaction permanently to the database.

33. Which of the following can be used to enforce uniqueness in a column?

- a) Primary Key
- b) Foreign Key
- c) CHECK Constraint
- d) INDEX

Answer: a) Primary Key

Explanation: A Primary Key ensures that all values in the column are unique and not null.

34. Which type of SQL statement is used to remove a database object?

- a) CREATE
- b) DELETE
- c) TRUNCATE
- d) DROP

Answer: d) DROP

Explanation: The `DROP` statement is used to remove database objects like tables, indexes, or databases permanently.

35. Which keyword is used to remove duplicate rows from a result set in SQL?

- a) DISTINCT
- b) UNIQUE
- c) DELETE
- d) EXCLUDE

Answer: a) DISTINCT

Explanation: The `DISTINCT` keyword is used in SQL queries to return only unique rows, eliminating duplicate records.

36. What is the purpose of the HAVING clause in SQL?

- a) To filter records before grouping
- b) To filter records after grouping
- c) To join two tables
- d) To update records

Answer: b) To filter records after grouping

Explanation: The `HAVING` clause is used to filter groups created by the `GROUP BY` clause, whereas `WHERE` is used to filter rows before grouping.

37. Which of the following normal forms eliminates partial dependency?

- a) First Normal Form (1NF)
- b) Second Normal Form (2NF)
- c) Third Normal Form (3NF)
- d) Boyce-Codd Normal Form (BCNF)

Answer: b) Second Normal Form (2NF)

Explanation: A table is in 2NF if it is in 1NF and all non-key attributes are fully functionally dependent on the primary key, eliminating partial dependencies.

38. What is the result of a Cartesian product in SQL?

- a) A join between two tables based on a condition
- b) A combination of all rows from two or more tables
- c) A selection of matching rows from multiple tables
- d) An update of multiple tables

Answer: b) A combination of all rows from two or more tables

Explanation: A Cartesian product multiplies the rows from the involved tables, resulting in every possible combination of rows.

39. Which of the following SQL functions is used to return the length of a string?

- a) LEN()
- b) LENGTH()
- c) SIZE()
- d) COUNT()

Answer: b) LENGTH()

Explanation: The `LENGTH()` function returns the number of characters in a string.

40. Which of the following is used to define the relationships between tables?

- a) Primary Key
- b) Secondary Key
- c) Foreign Key
- d) Candidate Key

Answer: c) Foreign Key

Explanation: A foreign key establishes a link between two tables by referencing the primary key of another table.

41. In SQL, what does the term "trigger" refer to?

- a) A predefined action to be performed before or after a database event
- b) A unique key constraint
- c) A function to update the database
- d) A foreign key enforcement mechanism

Answer: a) A predefined action to be performed before or after a database event

Explanation: A `TRIGGER` is an SQL procedure that is automatically executed in response to certain events on a particular table.

42. Which of the following is a DML command?

- a) INSERT
- b) DROP

- c) CREATE
- d) ALTER

Answer: a) INSERT

Explanation: Data Manipulation Language (DML) commands, such as `INSERT`, `UPDATE`, and `DELETE`, are used to modify data in a database.

43. Which of the following represents the highest level of abstraction in a database?

- a) Physical Level
- b) View Level
- c) Conceptual Level
- d) Logical Level

Answer: b) View Level

Explanation: The view level provides a user-specific perspective of the database, which is the highest level of abstraction in the three-schema architecture.

44. Which of the following SQL functions returns the current date and time?

- a) `SYSDATE()`
- b) `NOW()`
- c) `CURDATE()`
- d) `GETDATE()`

Answer: b) `NOW()`

Explanation: The `NOW()` function returns the current date and time in SQL.

45. What is the purpose of indexing in a database?

- a) To ensure data consistency
- b) To establish relationships between tables
- c) To speed up query execution
- d) To enforce primary keys

Answer: c) To speed up query execution

Explanation: Indexing improves the performance of query execution by providing quick access to rows based on the indexed columns.

46. Which of the following is used to rollback a transaction in SQL?

- a) COMMIT
- b) ROLLBACK
- c) SAVEPOINT
- d) DELETE

Answer: b) ROLLBACK

Explanation: `ROLLBACK` undoes all changes made during the current transaction, returning the database to its previous state.

47. What does the term "tuple" refer to in the relational model?

- a) A table
- b) A row
- c) A column
- d) A key

Answer: b) A row

Explanation: In the relational model, a tuple represents a single row of data in a table.

48. Which of the following is not a database object?

- a) Table
- b) Index
- c) View
- d) Field

Answer: d) Field

Explanation: `Field` refers to an attribute or column in a table, whereas tables, indexes, and views are considered database objects.

49. Which of the following is a set-based operation in relational algebra?

- a) JOIN
- b) UNION
- c) SELECT
- d) INSERT

Answer: b) UNION

Explanation: `UNION` is a set-based operation that combines the result sets of two or more queries, removing duplicates.

50. Which of the following commands is used to remove a view in SQL?

- a) DROP VIEW
- b) DELETE VIEW
- c) REMOVE VIEW
- d) TRUNCATE VIEW

Answer: a) DROP VIEW

Explanation: The `DROP VIEW` command is used to delete a view from the database.

51. Which of the following is a valid ACID property in DBMS?

- a) Accessibility
- b) Atomicity
- c) Compression
- d) Identity

Answer: b) Atomicity

Explanation: ACID stands for Atomicity, Consistency, Isolation, and Durability, which are properties that ensure reliable database transactions.

52. Which SQL clause is used to filter the result set based on a condition?

- a) SELECT
- b) WHERE
- c) GROUP BY
- d) HAVING

Answer: b) WHERE

Explanation: The `WHERE` clause is used to filter records based on specific conditions.

53. Which type of join returns all rows from the left table and matching rows from the right table?

- a) INNER JOIN
- b) FULL JOIN
- c) LEFT JOIN
- d) RIGHT JOIN

Answer: c) LEFT JOIN

Explanation: A `LEFT JOIN` returns all rows from the left table, along with matching rows from the right table. Unmatched rows from the right table return null.

54. In a relational database, what is the degree of a table?

- a) The number of tuples
- b) The number of attributes
- c) The number of primary keys
- d) The number of rows

Answer: b) The number of attributes

Explanation: The degree of a table refers to the number of attributes (columns) in the table.

55. Which SQL keyword is used to change the name of a table?

- a) RENAME
- b) UPDATE
- c) MODIFY
- d) CHANGE

Answer: a) RENAME

Explanation: The `RENAME` keyword is used to change the name of a table or a column in SQL.

56. Which of the following is a feature of NoSQL databases?

- a) Fixed schema
- b) Horizontal scalability
- c) Relational data model
- d) High normalization

Answer: b) Horizontal scalability

Explanation: NoSQL databases are known for their horizontal scalability, which allows them to handle large amounts of data across distributed systems.

57. What does the SQL command REVOKE do?

- a) Removes a database object
- b) Reverses a transaction
- c) Removes user permissions
- d) Adds a new role

Answer: c) Removes user permissions

Explanation: The `REVOKE` command removes previously granted user privileges or permissions.

58. Which of the following is a key advantage of using views in SQL?

- a) Improve query performance
- b) Simplify complex queries
- c) Allow for data insertion
- d) Remove duplicate records

Answer: b) Simplify complex queries

Explanation: Views can simplify complex queries by providing a layer of abstraction, representing pre-defined queries that can be reused.

59. Which command is used to modify existing data in a table?

- a) ALTER
- b) UPDATE
- c) INSERT
- d) CREATE

Answer: b) UPDATE

Explanation: The `UPDATE` command is used to modify existing records in a table.

60. What is a surrogate key in DBMS?

- a) A foreign key used for relationships
- b) A unique key generated by the system
- c) A composite key made of multiple attributes
- d) A primary key used in multiple tables

Answer: b) A unique key generated by the system

Explanation: A surrogate key is a system-generated unique identifier that is used as a primary key in a table.