

1. Which of the following is not an example of DBMS?

- a) MySQL
- b) Microsoft Access
- c) IBM DB2
- d) Google

Answer: d

Explanation: MySQL, Microsoft Access, IBM DB2 are database management systems while Google is a search engine. MySQL is a Linux-based database management system, Microsoft Access is a tool that is a part of Microsoft Office used to store data, IBM DB2 is a database management system developed by IBM. Google's Bigtable is the database that runs Google's Internet search, Google Maps, YouTube, Gmail, and other products.

2. Which of the following is not a feature of DBMS?

- a) Minimum Duplication and Redundancy of Data
- b) High Level of Security
- c) Single-user Access only
- d) Support ACID Property

Answer: c

Explanation: Single-user Access only" is not a feature of DBMS. DBMS allows multiple users to access and manipulate the database concurrently. It provides mechanisms to handle concurrent access and ensure data consistency and integrity among multiple users.

3. What is information about data called?

- a) Hyper data
- b) Tera data
- c) Meta data
- d) Relations

Answer: c

Explanation: Information about data is known as Metadata. Metadata describes the data in detail by providing additional information like type, length of the data, etc. Metadata helps the user to understand the data.

4. What does an RDBMS consist of?

- a) Collection of Records
- b) Collection of Keys
- c) Collection of Tables
- d) Collection of Fields

Answer: c

Explanation: It consists of a collection of tables i.e., the data is organized in tabular format. The

columns of the relation are known as Fields and rows of the relation are known as fields.
Constraints in a relation are known as Keys.

5. The ability to query data, as well as insert, delete, and alter tuples, is offered by _____

- a) TCL (Transaction Control Language)
- b) DCL (Data Control Language)
- c) DDL (Data Definition Language)
- d) DML (Data Manipulation Language)

Answer: d

Explanation: A query is a request for data or information. Relational Schema is the design and structure of the relation. DDL consists of commands that help in modifying. DML performs the change in the values of the relation.

6. _____ is a set of one or more attributes taken collectively to uniquely identify a record.

- a) Primary Key
- b) Foreign key
- c) Super key
- d) Candidate key

Answer: c

Explanation: Foreign key creates a relationship between two relations. Super key is the superset of all the keys in a relation. A candidate key is used to identify tuples in a relation.

7. Which command is used to remove a relation from an SQL?

- a) Drop table
- b) Delete
- c) Purge
- d) Remove

Answer: a

Explanation: Delete command is used to delete the existing record from the table. The drop table deletes the whole structure of the relation. Purge removes the table which cannot be obtained again.

8. _____ operations do not preserve non-matched tuples.

- a) Left outer join
- b) Inner join
- c) Natural join
- d) Right outer join

Answer: b

Explanation: Left outer join returns all the rows from the table that is on the left side and matching rows on the right side of the join. Inner join returns all rows when there is at least one match in BOTH tables. Natural join returns the common columns from the tables being joined. A right outer join returns all the rows from the table that is on the right side and matching rows on the left side of the join.

9. The oldest DB model is _____

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

Answer: a

Explanation: Network model has data stored in a hierarchical network flow. In a relational DBMS, the data is stored in the form of tables. Hierarchy is obtained by Parent-Child Relationship

10. Which of the following terms does refer to the correctness and completeness of the data in a database?

- a) Data security
- b) Data constraint
- c) Data independence
- d) Data integrity

Answer: d

Explanation: ACID property is satisfied by transaction in database.

11. Ensuring isolation property is the responsibility of the

- a) Recovery-management component of the DBMS
- b) Concurrency-control component of the DBMS
- c) Transaction-management component of the DBMS
- d) Buffer management component in DBMS

Answer: b

Explanation: Concurrency control ensures that correct results for concurrent operations are generated while getting those results as quickly as possible.

12. Which normal form is considered adequate for normal relational database design?

- a) 2NF
- b) 5NF
- c) 4NF

d) 3NF

Answer: d

Explanation: A relational database table is often described as “normalized” if it is in the Third Normal Form because most of the 3NF tables are free of insertion, update, and deletion anomalies.

13. Which of the following is TRUE?

- a) Every relation in 2NF is also in BCNF
- b) A relation R is in 3NF if every non-prime attribute of R is fully functionally dependent on every key of R
- c) Every relation in BCNF is also in 3NF
- d) No relation can be in both BCNF and 3NF

Answer: c

Explanation: A relational database table is often described as “normalized” if it is in the Third Normal Form because most of the 3NF tables are free of insertion, update, and deletion anomalies.

14. Pipelines can be executed in _____ ways.

- a) 4
- b) 3
- c) 2
- d) 5

Answer: c

Explanation: Demand driven and producer driven pipelines are the two ways.

15. In a _____ operations do not wait for requests to produce tuples, but instead generate the tuples eagerly.

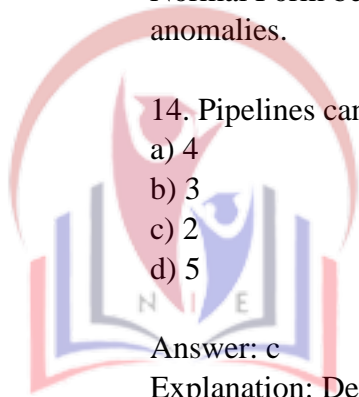
- a) Demand-driven pipeline
- b) Producer-driven pipeline
- c) Demand pipeline
- d) All of the mentioned

Answer: b

Explanation: Each operation in a producer-driven pipeline is modeled as a separate process or thread within the system that takes a stream of tuples from its pipelined inputs and generates a stream of tuples for its output.

16. A transaction may not always complete its execution successfully. Such a transaction is termed

- a) Aborted



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- b) Terminated
- c) Closed
- d) All of the mentioned

Answer: a

Explanation: If we are to ensure the atomicity property, an aborted transaction must have no effect on the state of the database.

17. When the transaction finishes the final statement the transaction enters into

- a) Active state
- b) Committed state
- c) Partially committed state
- d) Abort state

Answer: c

Explanation: The commit statement has to be issued to enter into committed state.

18. If the state of the database no longer reflects a real state of the world that the database is supposed to capture, then such a state is called

- a) Consistent state
- b) Parallel state
- c) Atomic state
- d) Inconsistent state

Answer: d

Explanation: If the state of the database no longer reflects a real state of the world that the database is supposed to capture, then such a state is called in a consistent state.

19. _____ means that data used during the execution of a transaction cannot be used by a second transaction until the first one is completed.

- a) Serializability
- b) Atomicity
- c) Isolation
- d) Time stamping

Answer: c

Explanation: Isolation means that data used during the execution of a transaction can't be used by a second transaction until the first one is completed.

20. In order to maintain transactional integrity and database consistency, what technology does a DBMS deploy?

- a) Triggers
- b) Pointers
- c) Locks
- d) Cursors

Answer: c

Explanation: Locks are used to maintain database consistency.

21. Which refers to a property of computer to run several operation simultaneously and possible as computers await response of each other

- a) Concurrency
- b) Deadlock
- c) Backup
- d) Recovery

Answer: a

Explanation: Concurrency is a property of systems in which several computations are executing simultaneously, and potentially interacting with each other.

22. The deadlock state can be changed back to stable state by using _____ statement.

- a) Commit
- b) Rollback
- c) Savepoint
- d) Deadlock

Answer: b

Explanation: Rollback is used to rollback to the point before lock is obtained.

23. What are the ways of dealing with deadlock?

- a) Deadlock prevention
- b) Deadlock recovery
- c) Deadlock detection
- d) All of the mentioned

Answer: d

Explanation: Deadlock prevention is also called as deadlock recovery. Prevention is commonly used if the probability that the system would enter a deadlock state is relatively high; otherwise, detection and recovery are more efficient.

24. When transaction T_i requests a data item currently held by T_j , T_i is allowed to wait only if it has a timestamp smaller than that of T_j (that is, T_i is older than T_j). Otherwise, T_i is rolled back

(dies). This is

- a) Wait-die
- b) Wait-wound
- c) Wound-wait
- d) Wait

Answer: a

Explanation: The wait–die scheme is a non-preemptive technique.

25. When transaction T_i requests a data item currently held by T_j , T_i is allowed to wait only if it has a timestamp larger than that of T_j (that is, T_i is younger than T_j). Otherwise, T_j is rolled back (T_j is wounded by T_i). This is

- a) Wait-die
- b) Wait-wound
- c) Wound-wait
- d) Wait

Answer: c

Explanation: The wound–wait scheme is a preemptive technique. It is a counterpart to the wait–die scheme.

26. A deadlock exists in the system if and only if the wait-for graph contains a _____

- a) Cycle
- b) Direction
- c) Bi-direction
- d) Rotation

Answer: a

Explanation: Each transaction involved in the cycle is said to be deadlocked.

27. The entity relationship set is represented in E-R diagram as

- a) Double diamonds
- b) Undivided rectangles
- c) Dashed lines
- d) Diamond

Answer: d

Explanation: Dashed lines link attributes of a relationship set to the relationship set.

28. An entity set that does not have sufficient attributes to form a primary key is termed a _____

- a) Strong entity set
- b) Variant set

- c) Weak entity set
- d) Variable set

Answer: c

Explanation: An entity set that has a primary key is termed a strong entity set.

29. Weak entity set is represented as

- a) Underline
- b) Double line
- c) Double diamond
- d) Double rectangle

Answer: d

Explanation: Weak entity set is represented as a double rectangle in entity relationship diagram.

30. If you were collecting and storing information about your music collection, an album would be considered a(n) _____

- a) Relation
- b) Entity
- c) Instance
- d) Attribute

Answer: b

Explanation: An entity set is a logical container for instances of an entity type and instances of any type derived from that entity type.

31. The logical design, and the snapshot of the data at a given instant in time is known as?

- a) Instance & Relation
- b) Relation & Schema
- c) Domain & Schema
- d) Schema & Instance

Answer: d

Explanation: Instance is an instance of time, the relation is also known as table consists of data with similar characteristics, Domain is the collection of values that an attribute can contain and schema is a representation.

32. **SELECT** name ____ instructor name, course id

FROM instructor, teaches

WHERE instructor.ID= teaches.ID;

Which keyword must be used here to rename the field name?

- a) From
- b) Rename

- c) As
- d) Join

Answer: c

Explanation: As keyword is used to rename.

33. Which one of the following provides the ability to query information from the database and to insert tuples into, delete tuples from, and modify tuples in the database?

- a) DML(Data Manipulation Language)
- b) DDL(Data Definition Language)
- c) Query
- d) Relational Schema

Answer: a

Explanation: DML performs the change in the values of the relation.

34. **CREATE TABLE** employee (name **VARCHAR**, id **INTEGER**)

What type of statement is this?

- a) DML
- b) DDL
- c) View
- d) Integrity constraint

Answer: b

Explanation: Data Definition language is the language which performs all the operation in defining structure of relation.

35. Which of the following creates a virtual relation for storing the query?

- a) Function
- b) View
- c) Procedure
- d) None of the mentioned

Answer: b

Explanation: Any such relation that is not part of the logical model, but is made visible to a user as a virtual relation, is called a view.

36. Updating the value of the view

- a) Will affect the relation from which it is defined
- b) Will not change the view definition
- c) Will not affect the relation from which it is defined
- d) Cannot determine

Answer: a

37. A _____ is a special kind of a store procedure that executes in response to certain action on the table like insertion, deletion or updation of data.

- a) Procedures
- b) Triggers
- c) Functions
- d) None of the mentioned

Answer: b

Explanation: Triggers are automatically generated when a particular operation takes place.

38. The variables in the triggers are declared using

- a) –
- b) @
- c) /
- d) /@

Answer: b

Explanation: Example : declare @empid int; where empid is the variable.

39. Triggers _____ enabled or disabled

- a) Can be
- b) Cannot be
- c) Ought to be
- d) Always

Answer: a

Explanation: Triggers can be manipulated.

40. Dates must be specified in the format

- a) mm/dd/yy
- b) yyyy/mm/dd
- c) dd/mm/yy
- d) yy/dd/mm

Answer: b

Explanation: yyyy/mm/dd is the default format in sql.

41. Relational Algebra is a _____ query language that takes two relations as input and produces another relation as an output of the query.

- a) Relational
- b) Structural

- c) Procedural
- d) Fundamental

Answer: c

Explanation: This language has fundamental and other operations which are used on relations.

42. Which of the following is a fundamental operation in relational algebra?

- a) Set intersection
- b) Natural join
- c) Assignment
- d) None of the mentioned

Answer: d

Explanation: The fundamental operations are select, project, union, set difference, Cartesian product, and rename.

43. Which of the following is used to denote the selection operation in relational algebra?

- a) Pi (Greek)
- b) Sigma (Greek)
- c) Lambda (Greek)
- d) Omega (Greek)

Answer: b

Explanation: The select operation selects tuples that satisfy a given predicate.

44. The _____ operation, denoted by $-$, allows us to find tuples that are in one relation but are not in another.

- a) Union
- b) Set-difference
- c) Difference
- d) Intersection

Answer: b

Explanation: The expression $r - s$ produces a relation containing those tuples in r but not in s .

45. The assignment operator is denoted by

- a) \rightarrow
- b) \leftarrow
- c) $=$
- d) $==$

Answer: b

Explanation: The result of the expression to the right of the \leftarrow is assigned to the relation variable on the left of the \leftarrow .

46. The join operations that do not retain mismatched tuples are called as _____ operations

- a) outer join
- b) natural join
- c) full outer join
- d) inner join

Answer: d

Explanation: The join operations that do not retain mismatched tuples are called as inner join operations. The inner join operations do not preserve any tuples that are otherwise preserved in the outer join operation.

47. What is the function of a left outer join?

- a) It preserves tuples only in the relation named before the operation
- b) It preserves tuples only in the relation named after the operation
- c) It preserved tuples in the relations named on both the sides of the operation
- d) It does not preserve any tuples on either side of the relation

Answer: a

Explanation: The left outer join operation preserves the tuples named before the operation.

48. What is the function of a full outer join?

- a) It preserves tuples only in the relation named before the operation
- b) It preserves tuples only in the relation named after the operation
- c) It preserved tuples in the relations named on both the sides of the operation
- d) It does not preserve any tuples on either side of the relation

Answer: c

Explanation: The full outer join operation preserves the tuples named on both the sides of the operation. Unlike the inner join, outer joins preserve tuples from either or both sides of the operation.

49. What is the function of a right outer join?

- a) It preserves tuples only in the relation named before the operation
- b) It preserves tuples only in the relation named after the operation
- c) It preserved tuples in the relations named on both the sides of the operation
- d) It does not preserve any tuples on either side of the relation

Answer: b

Explanation: The right outer join operation preserves the tuples named after the operation.

50. If a left outer join is performed and the tuple on the left hand side does not match with the tuple on the right hand side, what happens to the values that are preserved on the left hand side?

- a) They are given null values
- b) They are given a random value
- c) The user is asked to enter data
- d) The query is declared invalid by the compiler

Answer: a

Explanation: If a left outer join is performed and the tuple on the left hand side does not match with the tuple on the right hand side, the remaining values are given a null value.



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