

1. 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

Ans: (C) Every relation in BCNF is also in 3NF

2. Which of the statements given below might cause an irrevocable error in the database system?

- (A) A data item is read by the transaction post it is written by the uncommitted transaction
- (B) A data item is read by the transaction post it is written by the committed transaction
- (C) A data item is written by the transaction post it is read by the committed transaction
- (D) A data item is written by the transaction post it is read by the uncommitted transaction

Ans: (A) A data item is read by the transaction post it is written by the uncommitted transaction

3. Given the basic ER and relational models, which of the following is INCORRECT?

- (A) An attributes of an entity can have more that one value
- (B) An attribute of an entity can be composite
- (C) In a row of a relational table, an attribute can have more than one value
- (D) In a row of a relational table, an attribute can have exactly one value or a NULL value

Ans: (C) In a row of a relational table, an attribute can have more than one value

4. Which of the following statements are TRUE about an SQL query?

P: An SQL query can contain a HAVING clause even if it does not a GROUP BY clause

Q: An SQL query can contain a HAVING clause only if it has a GROUP BY clause

R: All attributes used in the GROUP BY clause must appear in the SELECT clause

S: Not all attributes used in the GROUP BY clause need to appear in the SELECT clause

- (A) P and R
- (B) P and S
- (C) Q and R
- (D) Q and S

Ans: (C) Q and R

5. Given below is the basic ER and relational model. In this context which of the statements given below is Incorrect?

- (A) An attribute of an entity can be composite
- (B) In the row of a relational table, an attribute may have exactly one or a Null value
- (C) An attribute of an entity may have a value more than one.
- (D) In the row of a relational table, an attribute can have more than one value **Ans:**

(D) In the row of a relational table, an attribute can have more than one value

6. Given below is the basic ER and relational model. In this context which of the statements given below is Incorrect?

- (A) An attribute of an entity can be composite
- (B) In the row of a relational table, an attribute may have exactly one or a Null value
- (C) An attribute of an entity may have a value more than one.
- (D) In the row of a relational table, an attribute can have more than one value

Ans: (A) An attribute of an entity can be composite

7. Referential Integrity constraint functions make use of the _____ concept

- (A) Primary key
- (B) Super key
- (C) Foreign key
- (D) Secondary key

Ans: (C) Foreign key

8. In a given relational schema, each tuple will be divided into fields called the _____

- (A) Domains
- (B) Queries
- (C) Relations
- (D) None of the above

Ans: (A) Domains

9. Which one from the list given below is an aggregate function in SQL?

- (A) Avg
- (B) Distinct
- (C) Ordered by
- (D) Select

Ans: (A) Avg

10. What is the hashing function in the Hierarchical database used for locating from the list given below?

- (A) Foreign key
- (B) Root
- (C) Records
- (D) Collision

Ans: (C) Records

11. _____ is said to be the logical design of a database, whereas the snapshot of data in a database at any given point in time is called the _____

- (A) Attribute domain, attribute value
- (B) Database schema, database instance
- (C) Database schema, attribute domain
- (D) Database relation, attribute

Ans: (B) Database schema, database instance

12. The type of fields in which a clustering index is defined is of which type among the following?

- (A) Non-key and ordering
- (B) Key and non-ordering
- (C) Non-key and non-ordering
- (D) Key and ordering

Ans: (D) Key and ordering

13. In a conservative two-phase locking protocol, what is the role of a transaction?

- (A) It must release the exclusive locks only after the commit operation
- (B) It must acquire the locks at the beginning of the transaction

- (C) It must acquire the exclusive locks at the beginning of the transaction
- (D) It must release the locks at the beginning of the transaction

Ans: (B) It must acquire the locks at the beginning of the transaction

14. Which of the statements about an SQL query given below can be considered to be "TRUE"?

P: The SQL query may consist of a HAVING clause even when it does not have GROUP BY clause

Q: The SQL query may consist of a HAVING clause only if it contains a GROUP BY clause

R: All the attributes used in a GROUP BY clause should appear in the SELECT clause

S: Not all the attributes used in GROUP BY clause must appear in the SELECT clause

- (A) P and S
- (B) P and R
- (C) Q and S
- (D) Q and R

Ans: (C) Q and S

15. Which of the options from the list given below in the place sorting algorithms must be the minimum number of swaps?

- (A) Quick sort
- (B) Heap sort
- (C) Insertion sort
- (D) Selection sort

Ans: (C) Insertion sort

16. Which of the statements given below is/are true?

- (A) An SQL query will automatically eliminate the duplicates
- (B) An SQL allows the attribute names to get repeated within the same relation
- (C) An SQL query may work if there happens to exist no indexes on the relations
- (D) None of the above-mentioned

Ans: (C) An SQL query may work if there happens to exist no indexes on the relations

17. DML (Data Manipulation Language) cannot be used for which of the options given below?

- (A) Creation of an information table within the Database

- (B) Deletion of the existing information in the Database
- (C) Modification of the existing information in the Database
- (D) Insertion of a new information into the existing Database

Ans: (A) Creation of an information table within the Database

18. What is the task of a Transaction manager? Choose the correct answer from the options given below.

- (A) Maintains the log of transactions
- (B) Maintains the before and after image of database
- (C) Maintains an appropriate control of concurrency
- (D) None of these

Ans: (C) Maintains an appropriate control of concurrency

19. In the relation scheme R (A, B, C, D, E, H) upon which the functional dependencies are {A→B, BC→D, E→C, D→A}, which are the candidate keys of R?

- (A) AE, BE, DEAE, BE
- (B) AE, BE
- (C) AEH, BEH, BCH
- (D) AEH, BEH, DEH

Ans: (D) AEH, BEH, DEH

20. Which of the following statements is true?

- (A) Every relation present in 3NF is also present in BCNF
- (B) A relation R can be said to be in 3NF if each non-prime attribute of R is entirely functionally dependent on each key of R
- (C) Every relation present in BCNF is also present in 3NF
- (D) No relation can exist in both BCNF and 3NF

Ans: (A) Every relation present in 3NF is also present in BCNF

21. Which of the options given below contains a complete record of all the activities that have affected the content in a database in a given period of time.

- (A) Transaction log
- (B) Report writer
- (C) Query language
- (D) Data manipulation language

Ans: (A) Transaction log

22. The rules of Classification in the Data Mining system are extracted from which of the options given below?

- (A) Decision Tree
- (B) Data
- (C) Information
- (D) Database

Ans: (A) Decision Tree

23. The use of Preemption and Transaction Rollback prevents which among the following situations?

- (a) Data manipulation
- (b) Deadlock situation
- (c) File preemption
- (d) Unauthorised usage of data files

Ans: (b) Deadlock situation

24. From the options given below for desired features, which can be said to be beyond the capacity of a relational algebra?

- (A) Finding a transitive closure
- (B) Aggregate computation
- (C) Multiplication
- (D) All of the above

Ans: (A) Finding a transitive closure

25. If a certain block is capable of holding either 10 key pointers or 3 records or and a database consists of "n" number of records, how many blocks are needed to hold the data file as well as the dense index?

- (A) $13n/30$
- (B) $N/10$
- (C) $N/30$
- (D) $N/3$

Ans: (a) $13n/30$

26. What among the given options refers to the correctness and the completeness of a given data in the database?

- (A) Data security
- (B) Data integrity
- (C) Data constraint
- (D) Data independence

Ans: (B) Data integrity

27. Which among the given options below is the highest level of isolation in transaction management?

- (A) Committed read
- (B) Serializable
- (C) Repeated read
- (D) Uncommitted read

Ans: (B) Serializable