BACHELOR OF COMPUTER APPLICATION
SECOND SEMESTER
RELATIONAL DATABASE MANAGEMENT SYSTEM
BCA – 08
(Use separate answer scripts for Objective & Descriptive)

Duration: 3 hrs.   **Full Marks: 70**

(PART A : Objective)

Time: 20 min.   **Marks: 20**

Choose the correct answer from the following: 1×20=20

1. The raw facts and figures are:
   a. Data   b. Information
   c. Snapshot   d. Reports

2. In a relational schema, each tuple is divided into fields called:
   a. Relations   b. Domains
   c. Queries   d. All of the above

3. DFD stands for:
   a. Data Flow Document   b. Data File Diagram
   c. Data Flow Diagram   d. None of the above

4. In an ER model…………… is described in the database by storing its data.
   a. Entity   b. Attribute
   c. Relationship   d. Notation

5. Which database level is closest to the users?
   a. External   b. Internal
   c. Physical   d. Conceptual

6. A ....is a set of column that identifies every row in a table.
   a. composite key   b. candidate key
   c. foreign key   d. super key

7. ....command can be used to modify a column in a table.
   a. alter   b. update
   c. set   d. create

8. To delete a database .... command is used.
   a. delete database database_name   b. delete database_name
   c. drop database database_name   d. drop database_name

9. The full form of DDL is:
   a. Dynamic Data Language   b. Detailed Data Language
   c. Data Definition Language   d. Data Derivation Language

10. The feature that database allows to access only certain records in database is:
   a. Forms   b. Reports   c. Queries   d. Tables

11. The full form of DML is:
   a. Data Manipulation Language   b. Data Mark-up Language
   c. Data Modification Language   d. Derived Manipulation Language

12. Which normal form is considered adequate for relational database design?
   a. 2 NF   b. 3 NF   c. 4 NF   d. BCNF

13. The ....is essentially used to search for patterns in target string.
   a. Like Predicate   b. Null Predicate
   c. In Predicate   d. Out Predicate

14. Which of the following is not a binary operator in relational algebra?
   a. Join   b. Semi-Join
   c. Assignment   d. Project

15. ....specifies a search condition for a group or an aggregate.
   a. GROUP BY Clause   b. HAVING Clause
   c. FROM Clause   d. WHERE Clause

16. ....defines rules regarding the values allowed in columns and is the standard mechanism for enforcing database integrity.
   a. Column   b. Constraint
   c. Index   d. Trigger

17. ....requires that data should be modified by only authorized users.
   a. Data integrity   b. Privacy
   c. Security   d. None of the above

18. Identify the characteristics of transactions:
   a. Atomicity   b. Durability
   c. Isolation   d. All of the mentioned

19. Which of the following protocols ensures conflict serializability and safety from deadlocks?
   a. Two-phase locking protocol   b. Time-stamp ordering protocol
   c. Graph based protocol   d. Both (a) and (b) above

20. Which of these mechanisms provides a way to retrieve multiple tuples from a relation and then process each tuple individually in a host program?
   a. Triggers   b. Cursors
   c. Assertions   d. None of these

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(Answer question no. 1 & any four (4) from the rest)

1. Explain the three levels of Architecture of database.   (10)

2. Define constraints. Explain the different constraints in DBMS.   (2+8=10)

3. Explain hashing and its hash functions with example.   (2+8=10)

4. What is indexing? Explain clustering index diagrammatically.   (3+7=10)

5. a) What are the different types of keys? Explain each of them with an example.
                                                            (5)

   b) Define lock. What are the two models of locking?   (5)

6. a) What is normalization? Define each normal form briefly.   (5)

   b) What is timestamp? How does a system generate a timestamp?   (5)

7. a) Define database.   (2×5=10)

   b) What is data abstraction?

   c) What is the difference between an attribute and a domain?

   d) What do you mean by an entity type?

   e) What is Logical data independence?

8. Differentiate between: (2×5=10)

   a) CHAR(n) and VARCHAR(n)

   b) Attribute and domain.

   c) Hashing and indexing.

   d) Lock-based technique and timestamp-based technique.

   e) Deadlock and starvation.

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