CBCS SCHEME

USN ☐☐☐☐☐☐☐☐☐☐

20MCA21

Second Semester MCA Degree Examination, Feb./Mar. 2022
Database Management System

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1. a. Define database management system. Explain its characteristics. **(10 Marks)**
   b. (i) What do you mean by data independence? Explain
      (ii) Explain with example advantages and disadvantages of DBMS. **(10 Marks)**

OR

2. a. Explain with suitable diagram, the 3-schema architecture of DBMS. **(10 Marks)**
   b. Write in detail the classification of Database Management Systems. **(10 Marks)**

Module-2

3. a. Explain the main phases of database design with proper diagram. **(10 Marks)**
   b. What are the different notations used in ER diagram and what is the naming conventions of schema construct? **(10 Marks)**

OR

4. a. Explain in detail the relational integrity constraints. **(10 Marks)**
   b. Discuss the different inference rules for functional dependencies. **(10 Marks)**

Module-3

5. a. Explain in detail all the parts of the SQL query. **(10 Marks)**
   b. Discuss in detail all aggregate functions in SQL. **(10 Marks)**

OR

6. a. What are key constraints? Explain the key constraints on relational database with suitable example. **(10 Marks)**
   b. Explain update operations on relational database. How constraints are violated during update operations? Explain. **(10 Marks)**

Module-4

7. a. What are viewses in SQL? Discuss on methodologies to implement views in SQL. **(10 Marks)**
   b. Explain in detail about PL/SQL and stored procedures. **(10 Marks)**

OR

8. a. What are triggers in SQL? How to implement triggers in SQL? Explain with suitable example. **(10 Marks)**
   b. Explain with example the schema change statements in SQL. **(10 Marks)**

Module-5

9. a. Explain ACID properties of a transaction in detail. **(10 Marks)**
   b. Discuss on Lock-based concurrency control issue in DBMS. **(10 Marks)**

OR

10. a. Write in detail about crash recovery algorithm. **(10 Marks)**
    b. Enumerate on anamalies due to interleaved execution of a transaction in detail. **(10 Marks)**

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