(6 pages)

Reg. No. : .....

Code No. : 10503 E **Sub. Code : CMCS 51**

B.Sc. (CBCS) DEGREE EXAMINATION.
APRIL 2024.

Fifth Semester

Computer Science – Core

RELATIONAL DATABASE MANAGEMENT SYSTEM

(For those who joined in July 2021–2022)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Which of the following is not a type of database?
   (a) Hierarchical
   (b) Network
   (c) Distributed
   (d) Decentralized

2. Which type of database is based on the relational model, using tables with rows and columns to organize data?
   (a) Hierarchical Database
   (b) Network Database
   (c) Object-Oriented Database
   (d) Relational Database

3. _____ function is used to suppress duplicate values.
   (a) SELECT
   (b) DISTINCT
   (c) BETWEEN
   (d) None of these

4. A _____ is a property of the entire relation. rather than of the individual tuples in which each tuple is unique.
   (a) Rows (b) Key
   (c) Attribute (d) Fields

5. All aggregate functions except _____ ignore null values in their input collection.
   (a) Count(attribute) (b) Count(*)
   (c) Avg (d) Sum

6. The union operation is represented by
   (a) $\cap$
   (b) $\cup$
   (c) –
   (d) *

7. A table is in 3NF if it is in 2NF and if it has no _____
   (a) Functional Dependencies
   (b) Transitive Dependencies
   (c) Trivial Functional Dependency
   (d) Multivalued Dependencies

8. Which of the following normal forms deals with partial dependencies?
   (a) First Normal Form (1NF)
   (b) Second Normal Form (2NF)
   (c) Third Normal Form (3NF)
   (d) Fourth Normal Form (4NF)

9. Which SQL statement is used to modify the structure of an existing table in Oracle?
   (a) UPDATE (b) ALTER
   (c) MODIFY (d) CHANGE

10. Which language is used to write procedural code in Oracle?
    (a) SQL (b) Java
    (c) PL/SQL (d) Python

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write about the purpose of database systems.

    Or

    (b) Differentiate between data mining and information retrieval.

12. (a) Explain the term database schema and instance.

    Or

    (b) Illustrate the concept relational data model.

13. (a) Illustrate the data types supported by SQL.

    Or

    (b) Write a note on *'nested sub-queries'* with example.

14. (a) Interpret the concept mapping cardinalities.

Or

(b) Write down the extended E-R features.

15. (a) Provide a SQL command to create a new sequence in a database.

Or

(b) List the advantages of PL/SQL.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain the types of database languages with an example.

Or

(b) Explain the role of Database Administrator.

17. (a) Classify the different relational operations.

Or

(b) Write the basic structure of SQL queries.

18. (a) Demonstrate different set operations with an example.

Or

(b) What are views? Explain with an example.

19. (a) Categorize the various components of E-R model.

Or

(b) Describe the projection and join normal form with example.

20. (a) Explain procedure in PL/SQL with suitable example.

Or

(b) How to modify the existing table? Explain with example.

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