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Question Paper Code : 70439

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2023.

Third/Fourth/Fifth/Eighth Semester

Computer Science and Engineering

CS 8492 — DATABASE MANAGEMENT SYSTEMS

(Common to : Computer and Communication Engineering/Mechanical and Automation Engineering / Mechatronics Engineering/Computer Science and Business Systems/Information Technology)

(Regulations 2017)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State the need for DBMS.

2. Define a schema.

3. Distinguish between an entity and attribute.

4. What do you mean by foreign key?

5. List the states of an Transaction.

6. If a schedule is in two phase, is there a possibility of getting deadlock?

7. What are the RAID applications?

8. Define Static hashing.

9. What is meant by DTD?

10. Define XML Schema.

PART B — (5 × 13 = 65 marks)

11. (a)   Explain the database system architecture with neat diagram.   (13)

Or

    (b)   (i)   Discuss the relative merits of different database models.   (7)

           (ii)   Explain the various operations involved in relational algebra.   (6)

12. (a) Discuss Boyce-codd Normal form. How does BCNF differ from 3NF. (13)

Or

(b) Briefly discuss about functional dependencies and multi-volved dependencies. (13)

13. (a) Explain about ACID properties of transaction in detail. (13)

Or

(b) Explain briefly about Two Phase Locking. (13)

14. (a) Discuss about B+ tree index files in detail. Explain how it differs with B tree. (13)

Or

(b) Explain the steps involved in query processing and brief about how query cost is estimated. (13)

15. (a) (i) Explain about ODMG object model in detail. (7)

(ii) Compare the features of object – based and object – relational database. (6)

Or

(b) (i) Briefly discuss about Object-Relational features. (7)

(ii) Write a brief note on Information Retrieval models (6)

PART C — (1 × 15 = 15 marks)

16. (a) Design a relational database for a College Principal's Office. The office maintains data about each class, including the instructor, the enrollment, and the time and place of the class meetings. For each student-class pair, a grade is recorded and sort out the differences between the terms relation and relation schema. (15)

Or

(b) Construct an E-R diagram for a car-insurance company that has a set of customers, each of whom owns one or more cars. Each car has associated with it zero to any number of recorded accidents. (15)

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