14718

B. Tech 6th Semester Examination

Relational Data Base Management System

CS-6004

Time : 3 Hours   **Max. Marks : 100**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt one question each from Sections A, B, C and D. Section E is compulsory. Write suitable comments wherever necessary. Assume Data wherever necessary.

SECTION - A

1. At what point during query processing does optimization occur? Explain semantic query optimization.   (20)

2. Discuss how serializability is used to enforce concurrency control in a database system? Why serializability is sometimes considered too restrictive as a measure of correctness of schedules?   (20)

SECTION - B

3. Explain a typical deferred protocol. Explain the algorithm that can be used for recovery using deferred update in a single user environment.   (20)

4. Discuss the types of privileges at the account level and at the relation level. Explain the control measures that are used to provide security of data in databases.   (20)

SECTION - C

5. What is the difference between persistent and transient objects? How persistence is handled in typical object oriented database systems?   (20)

6. Is it possible to successfully map a binary M:N relation type without requiring a new relation? Justify your answer with a suitable example.   (20)

SECTION - D

7. Explain the transparency features of distributed data base management systems. Explain various types of distribution transparency.   (20)

8. How is vertical partitioning of a relation specified? How can relation be put back from a complete vertical partitioning?

                                                                    (20)

SECTION - E

9. Short answer type Questions:-

    (a)   What is the need of system log?

    (b)   What is Inheritance?

    (c)   What is an exclusive lock?

    (d)   What are the properties of a transaction?

    (e)   List few emerging database applications.

    (f)   What is partitioned data allocation?

    (g)   What is a deadlock?

    (h)   Discuss database authorization.

    (i)   What is replication transparency?

    (j)   What is query execution plan?   (2x10=20)