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333750(22)

B. E. (Seventh Semester) Examination, Nov.-Dec. 2021

(New Scheme)

(IT Engg. Branch)

ADVANCED DATABASE MANAGEMENT SYSTEMS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) is of 2 marks and parts (b), (c) and (d) are of 7 marks. Part (a) is compulsory and attempt any two from (b), (c) and (d). Assume any missing data. Use diagrams wherever required.

Unit-I

1. (a) Define Fragmentation.

   (b) Discuss the design strategies for developing distributed database systems.

(c) Explain the Oracle DDB design.

(d) Explain with appropriate diagram distributed database system architecture.

Unit-II

2. (a) Define data replication in DDB.

(b) Discuss the strategies for replica control, consistency and request ordering in DDB.

(c) Explain Gossip architecture, process groups and ISIS.

(d) What is query optimization in centralized systems? Explain with examples.

Unit-III

3. (a) Define transaction processing and recovery in DDB.

(b) Explain with proper example the ARIES recovery algorithm.

(c) Discuss with proper examples distributed deadlock management and recovery concepts.

(d) Explain with proper examples the concept of distributed transactions, commit protocols and concurrency control in distributed systems.

Unit-IV

4. (a) Define PL/SQL.

(b) Explain with proper examples the PL/SQL block, structure and syntax.

(c) Describe various aspects of database security and TCSEC policy.

(d) Explain how data encryption and security is implemented in Oracle.

Unit-V

5. (a) Explain Parallel databases.

(b) Discuss interquery, Intraquery, Intraoperation and Interoperation.

(c) Discuss how Client/Server DBS is implemented in Oracle.

(d) Explain O.O. databases, Multimedia databases and real time databases.