UG Even Semester Examination, September, 2023

COMPUTER SCIENCE

(6th Semester)

Course No.: MCSCC-604

(Advanced Database Management System)

Full Marks: 70

Pass Marks: 28

Time: 3 hours

The figures in the margin indicate full marks for the questions.

Answer any five questions, taking one from each unit.

UNIT-I

1. (a) What is sequential file organisation? Write the pros and cons of sequantial file organisation. 7

   (b) Write the difference between static hashing and dynamic hashing. 7

2. (a) What is a storage area network (SAN)? Explain the pros and cons of SAN. 7

   (b) Describe the important terminologies used in hashing techniques. 7

UNIT-II

3. (a) What is a transaction? Explain the concurrent execution of transaction in detail. 7

   (b) Explain the serial and serializable schedule with an example. 7

4. (a) Discuss the ACID properties in detail. 7

   (b) What is the phantom problem? How can we solve the phantom problem? Explain with an example. 7

UNIT-III

5. (a) Explain the constructor function in OODB with an Example. 7

   (b) Discuss the persistent Java systems in detail. 7

6. (a) Describe the differences between object-oriented and object-relational databases. 7

   (b) What is inheritance in OODB? Explain the types of inheritance in OODB with an example. 7

UNIT-IV

7. (a) Explain the centralised system with diagram in detail. 7

   (b) Explain the transaction server process structure with a diagram. 7

8. (a) Explain the interconnection network architecture with a diagram. 7

   (b) Discuss the parallel database architecture with a diagram. 7

UNIT-V

9. (a) What is data transparency? Explain data transparency issues in detail. 7

   (b) Write short note on : 7

   (i) Timestamping

   (ii) Replication with Weak Consistency

   (iii) Multi-Master and Lazy Replication

10. (a) What is data fragmentation? Explain the advantages of data fragmentation. 7

    (b) What is data replication? Explain the pros and cons of data replication. 7

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