2016/ODD/08/24/MCS–504 (C)/ CS–702 (O)/592

UG Odd Semester (Old and CBCS) Exam., December—2016

COMPUTER SCIENCE

(5th Semester)

Course No. : MCS–504 (C) / CS–702 (O)

(Advance Database Management System)

Full Marks : 75

Pass Marks : 30 for (CBCS)
26 for (Old)

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer **five** questions, selecting **one** from each Unit

UNIT—I

1. *(a)* What is persistent programming language? Explain the approaches for making objects persistent in object-oriented database systems and accessing them. 8

(b) What is object identifier? Explain the characteristics of object identifier. 5

(c) What is Object Definition Language (ODL)? 2

2. *(a)* What do you mean by complex objects? Explain structured and unstructured complex objects with examples. 6

(b) What do you mean by literal? Explain different types of literals for the object-oriented database systems model. 3

(c) What are the object relational features included in SQL-99? Give examples with syntax. 6

UNIT—II

3. *(a)* Distinguish between client-server and parallel database systems. 5

(b) Explain MESH and hypercube networks for parallel processing system. 5

(c) What is I/O parallelism? Explain the basic data partitioning techniques. 5

4. *(a)* Explain the various parallel database system architectures. 7

(b) Explain interquery and intraquery parallelisms. How do interoperation and intraoperation parallelisms affect intra-query parallelism? 4

(c) Explain the pipelining of database operations for query processing. 4

UNIT—III

5. (a) Explain the approaches for storing data/relations in distributed databases. 8

(b) Discuss how cost of query processing is optimized in distributed database systems. 7

6. (a) Distinguish between parallel and distributed DBMS. 5

(b) Illustrate the classification of distributed database systems with special emphasis on federated database systems. 10

UNIT—IV

7. (a) What do you mean by schedule of transactions? Explain conflict and complete schedule with one example for each. 5

(b) How can conflict serializability of a schedule be tested by using precedence graph? Explain. 5

(c) Explain how the concept of serializability useful for concurrency control. 5

8. (a) Explain the two-phase locking techniques for concurrency control. 7

(b) Give an overview of concurrency control in distributed database systems. 8

UNIT—V

9. What is the necessity of commit protocols in distributed transaction processing? Illustrate the two-phase commit (2PC) and three-phase commit (3PC) protocols. 15

10. (a) Illustrate the database recovery techniques based on deferred updates. 10

(b) What is transaction rollback? Explain. 5

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