

Roll No. ....

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24062

## DISTRIBUTED SYSTEMS

Paper–MT–CSE–20–14 (ii)

Time allowed : 3 Hours]

[Maximum Marks : 75

**Note :** Attempt **five** questions in all, selecting **one** question from each unit. Question No. **1** is compulsory. All questions carry equal marks.

### Compulsory Question

1. Attempt all questions:

- (i) What is distributed data processing and how does it differ from centralised data processing? 4
- (ii) What is the role of view management in ensuring controlled access to data in distributed databases? 4
- (iii) What is the role of data localisation in distributed query processing? 4
- (iv) What is concurrency control and why is it important in centralised database systems? 3

### UNIT-I

- 2. (a) What are the primary features of distributed databases and why are they significant? Explain. 6
- (b) Discuss various types of distributed database systems. 9

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- 3. (a) What are the main functions of a distributed DBMS and how do they contribute to its objectives? 7
- (b) Discuss the Multi-database System Architecture. How is it different from a distributed DBMS? 8

### UNIT-II

- 4. Discuss the top-down design process and the design issues in distributed databases. 15
- 5. What is allocation problem? Discuss an allocation model that attempts to minimise the total cost of processing and storage while trying to meet certain response time restrictions. 15

### UNIT-III

- 6. Discuss the important characteristics of query processors that can be used as a basis for comparison. 15
- 7. (a) Discuss the primary objectives of database security in distributed environments. How do they address confidentiality, integrity and availability? 8
- (b) Discuss distributed catalog management. 7

### UNIT-IV

- 8. Discuss the (a) Centralised, (b) Distributed and (c) Hierarchical approaches of detecting distributed deadlocks. 15
- 9. (a) Explain the presumed abort and presumed commit 2PC protocols. 8
- (b) Discuss the recovery protocols for 2PC. 7

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