Question Paper Code : 70447

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Sixth Semester

Computer Science and Engineering

CS 8603 — DISTRIBUTED SYSTEMS

(Common to : Artificial Intelligence and Data Science)

(Regulations 2017)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What do you mean by Shared Memory?

2. Differentiate scalar time and vector time.

3. What do you mean by Asynchronous Execution?

4. Define synchronous programming.

5. Explain the term mutual exclusion.

6. What is Deadlock detection?

7. What do you mean by check point? What is its use?

8. What is Consensus in distributed System?

9. Define Peer-to-Peer computing. Give its advantage.

10. What is Distributed Shared Memory?

PART B — (5 × 13 = 65 marks)

11. (a) Illustrate Message Passing and Shared Memory Process Communication Model.

Or

(b) Elucidate the types of group communications used in Distributed Computing System.

12. (a) What is Asynchronous Execution with synchronous communication? Explain.

Or

(b) Illustrate Total & Casual Order in Distributed System with a neat diagram.

13. (a) Demonstrate Maekawa's Algorithm with an example.

Or

(b) Illustrate the different types of Deadlock models in Distributed System with the commonly used strategies to handle deadlocks with a neat diagram.

14. (a) Demonstrate the different types of failures in distributed Systems and elucidate in what way to prevent them.

Or

(b) Illustrate about the Agreement in synchronous systems with failures.

15. (a) Elucidate the diverse kinds of Overlay Networks with its advantages and disadvantages.

Or

(b) Enlighten the different types of Memory consistency models with its advantages.

PART C — (1 × 15 = 15 marks)

16. (a) Elucidate synchronous and Asynchronous Executions with a neat schematic block diagram. Explain causality in a synchronous execution with a suitable example.

Or

(b) Illustrate Suzuki-Kasami's Broadcast Algorithm for Mutual Exclusion in Distributed System.

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