

2023

**COMPUTER SCIENCE
(Practical)**

Paper : CSMP-205B

(Advanced Operating Systems)

Full Marks : 20

Problem : 15, viva voce : 05

The following questions are to be allocated to the examinees by a lottery (maximum two options per candidate). The students are to write programs, compile and need to demonstrate during the examination. The students are to write the assumptions and pseudo code for their problem.

1. Write a program to find the list of all possible initiator nodes for a State Recording Algorithm in a distributed system.
2. Write a program for recording states of a distributed system implementing the Chandy-Lamport's State Recording Algorithm.
3. Write a program to implement Ricart-Agrawala's Algorithm for mutual exclusion in a distributed system (using at least three different sites).
4. Write a program to implement Raymond's tree-based algorithm for mutual exclusion in a distributed system.

(2)

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5. Write a program to implement token-ring algorithm for mutual exclusion in a distributed system.
 6. Write a program implementing the Mitchell-Merritt Algorithm for deadlock detection in a distributed system.
 7. Write a program implementing the Ho-Ramamoorthy's Algorithm for deadlock detection in a distributed system.
 8. Write a program implementing the Chandy-Misra-Haas Algorithm for deadlock detection in a distributed system.
 9. Write a program to detect termination using diffusion computation-based algorithm.
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