

R18

Code No: 155AB

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, March - 2024

ADVANCED OPERATING SYSTEMS

(Common to CSE, IT)

Time: 3 Hours

Max. Marks: 75

Note: i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

- 1.a) What is vector clock? [2]
- b) What are the various issues in distributed operating system? [3]
- c) What is distributed mutual exclusion? [2]
- d) Distinguish between token based and nontoken based algorithms. [3]
- e) How does deadlock occur in a distributed environment? [2]
- f) Discuss various issues that arise in deadlock detection. [3]
- g) What is multiprocessor system? [2]
- h) Distinguish between process and thread. [3]
- i) What are various issues that arise in task migration? [2]
- j) What do you mean by memory coherence? [3]

PART – B

(50 Marks)

- 2.a) What are communication primitives? Explain them.
- b) What do you mean by causal ordering of messages? Explain them. [5+5]

OR

- 3.a) What are the inherent limitations of a distributed system?
- b) What is logical clock? [5+5]

4. Explain Maekawa's nontoken based algorithm. [10]

OR

5. Explain Raymond's Heuristic algorithm in detail. [10]

6. Explain distributed deadlock detection algorithms. [10]

OR

7. Explain how deadlock is handled in distributed systems. [10]

8. Explain structures of multiprocessor operating system. [10]

OR

9. What are various mechanisms for building distributed file system? Explain them. [10]

10. Explain load distributing algorithms in detail. [10]

OR

11. Explain various algorithms for implementing DSM. [10]

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