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B.E. (Computer Science & Engineering) Eighth Semester (C.B.S.)

Distributed Operating System

P. Pages : 2 **NJR/KS/18/4746**

Time : Three Hours * 0 6 1 9 * Max. Marks : 80

Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Differentiate between micro kernal and monolithic kernal approaches for designing a distributed operating system. Discuss their relative advantages and disadvantages. **7**

b) What are the limitations of Lamport logical clocks ? Explain vector clocks. **7**

OR

2. a) What is meant by cuts of distributed computation ? What is consistent cut. **7**

b) Explain vector clocks with the help of examples. **7**

3. a) State and justify how Ricart - Agrawal's algorithm achieves mutual exclusion. **7**

b) Discuss in detail Raymonds Tree Based algorithm with the help of example. **6**

OR

4. a) State how to analyze performance of mutual exclusion algorithm. **6**

b) State and explain Lamport's algorithm. **7**

5. a) Explain Chandy - Mishra - Haas's Edge chasing algorithm for distributed deadlock detection with the help of example. **8**

b) Describe AND and OR request model for distributed deadlocks, give name of algorithms based on above request models. **5**

OR

6. a) Explain Ho-Ramamurthy centralized deadlock detection algorithm. **7**

b) What are agreement protocols ? Explain in detail. **6**

7. a) Explain architecture of distributed file system. **7**

b) Explain coherence protocols. **6**

OR

8. a) What are the design issues in distributed resource management ? Explain. **7**

b) Explain following terms related to file system of distributed system. **6**
i) Mounting
ii) Caching
iii) Hints

9. a) Explain adaptive algorithm for load distribution. **7**

b) Explain the concept of load distributing along with receiver initiated algorithm. **6**

OR

10. a) Explain how task migration effects the performance of load sharing algorithm. **6**

b) Discuss mechanism to select a suitable load sharing algorithm. **7**

11. a) Explain following with help of example - **9**
i) Orphan messages and domino effect.
ii) Lost messages
iii) Problem with live lock

b) Explain the characteristics of checkpoint algorithm. **5**

OR

12. a) Explain with suitable example. **14**

i) Commit Protocol

ii) 2 phase commit protocol

iii) Static voting protocol.

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The secret of getting ahead is getting started.

~ Mark Twain