

# QUESTIONS – Distributed Process Synchronization

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# Questions – Distributed Process Synchronization

1. In Raymond's tree based DME algorithm, what happens to the message overload when arrival rate of critical section requests increases at each node?
2. How deadlock situation is handled in Meakawa's DME algorithm?
3. Compare the performance of Ricart-Agrawala's token based DME algorithm with Ricart-Agrawala's permission based algorithm
4. If communication channel is NON-FIFO, does
  - a. Lamport's DME algorithm ensures mutual exclusion condition?
  - b. Ricart-Agrawala's permission based DME algorithm ensures mutual exclusion condition?
5. "Token based DME algorithms are less fault tolerant than permission based algorithms" Comment on this.
6. Which one of the following algorithm is fair with respect to Lamport's clock? Why?
  1. Meakawa's DME algorithm
  2. Ricart-Agrawala's DME algorithm
  3. Raymond's tree based DME algorithm
7. Differentiate:
  1. Fair DME algorithm from starvation free DME algorithm
  2. Framework for DME algorithm from its centralized counterpart.
  3. Permission based DME algorithm from token based DME algorithm
  4. DME algorithm performance measure: Response time from Waiting time.

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8. Give pseudo-code for
  1. Lamport's DME algorithm
  2. Ricart Agrawala's permission and token based DME algorithm
  3. Meakawa's DME algorithm
  4. Raymond's tree based DME algorithm
9. Compare the performance measures between following algorithm:
  1. Lamport's DME algorithm
  2. Ricart Agrawala's permission and token based DME algorithm
  3. Meakawa's DME algorithm
  4. Raymond's tree based DME algorithm
10. What is the necessity of INQUIRE and RELINQUISH message in Meakawa's DME algorithm?
11. What is the problem if the topology considered for Raymond's algorithm has a cycle?
12. How you can convert the following algorithm into greedy algorithms?
  1. Ricart-Agrawala's token based DME algorithm and
  2. Raymond's tree based algorithm