



Department of Computer Science and Engineering
CS8603 Distributed Systems
Unit III - MCQ Bank

1. If deadlocks occur frequently, the detection algorithm must be invoked _____
 - a) rarely
 - b) frequently**
 - c) rarely & frequently
 - d) none of the mentioned
2. What is the disadvantage of invoking the detection algorithm for every request?
 - a) overhead of the detection algorithm due to consumption of memory
 - b) excessive time consumed in the request to be allocated memory
 - c) considerable overhead in computation time**
 - d) all of the mentioned
3. A deadlock eventually cripples system throughput and will cause the CPU utilization to _____
 - a) increase
 - b) drop**
 - c) stay still
 - d) none of the mentioned
4. Every time a request for allocation cannot be granted immediately, the detection algorithm is invoked. This will help identify _____
 - a) the set of processes that have been deadlocked**
 - b) the set of processes in the deadlock queue
 - c) the specific process that caused the deadlock
 - d) all of the mentioned
5. Invoking periodically to test for deadlock is one of the way for deadlock _____
 - a) Prevention
 - b) Avoidance
 - c) Detection**
 - d) Deletion
6. With deadlock detection, request resources are granted to
 - a) Resources
 - b) Programs
 - c) Processes**
 - d) Users

7. A direct method of deadlock prevention is to prevent the occurrence of a _____
- Mutual exclusion
 - Hold and Wait
 - Preemption
 - d) Circular wait**
8. Maekawa's algorithm is a _____ mutual exclusion algorithm.
- Token-based
 - b) Voting-based**
 - Non-token based
 - Tree-based
9. _____ is a process that prevents multiple threads or processes from accessing shared resources at the same time
- Deadlock
 - Critical section
 - c) Mutual exclusion**
 - Message passing
10. Select NON-token-based algorithm from the options below.
- Suzuki-Kasami's Broadcast Algorithm
 - Singhal's Heuristic Algorithm
 - Raymond's Tree-Based Algorithm
 - d) Ricart-Agrawala Algorithm**
11. Number of message required in Ricart Agrawala Algorithm is?
- $3(N-1)$
 - b) $2(N-1)$**
 - $3vN$
 - N
12. Number of message required in Suzuki Kasami algorithm is
- $3(N-1)$
 - $2(N-1)$
 - c) 0 or N**
 - 0 or $(N-1)$
13. In Suzuki Kasami, When site S_i receives a REQUEST(j, n) message, it sets
- a) $RNi [j] := \max(RNi [j], n)$**
 - $RNi [j] := \text{Min}(RNi [j], n)$
 - $RNi [j] := \text{Avg}(RNi [j], n)$
 - None of these

14. A distributed system is defined as a collection of autonomous computers linked by a network with software designed to produce an integrated computing facility. True or False?

- (a) False
- (b) **True**

15. Which amongst the following is not an advantage of Distributed systems?

- (a) Resource sharing
- (b) Incremental growth
- (c) **Reliability**
- (d) None of the above

16. Which of the following will be true distributed system ?

- a) **tightly-coupled software on loosely-coupled hardware**
- b) loosely-coupled software on tightly-coupled hardware
- c) tightly-coupled software on tightly-coupled hardware
- d) loosely-coupled software on loosely-coupled hardware

17. Distributed systems should ?

- a) high security
- b) **have better resource sharing**
- c) better system utilization
- d) low system overhead

18. In distributed systems, link and site failure is detected by _____

- a) polling
- b) **handshaking**
- c) token passing
- d) none of the mentioned

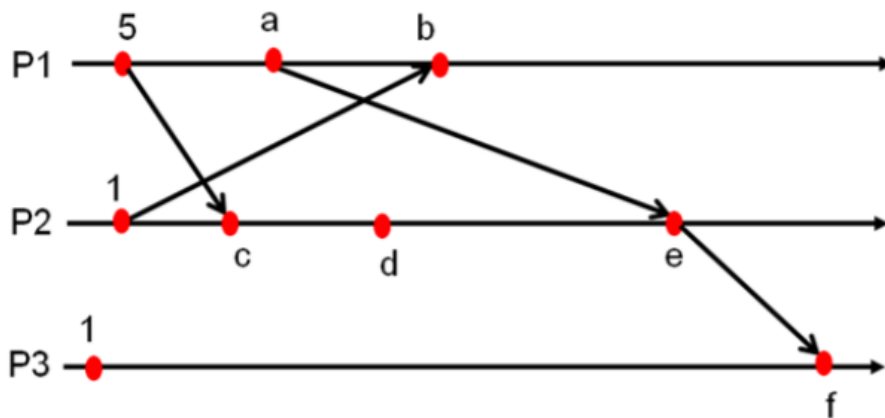
19. Consider the following statements:

Statement 1: When two processes are competing with each other causing data corruption, it is called deadlock.

Statement 2: When two processes are waiting for each other directly or indirectly, it is called race condition.

- a) Only statement 1 is true
- b) Only statement 2 is true
- c) **Both statements are true**
- d) Both statements are false

20. Assign Lamport timestamps to the events (a, b, c, d, e, f) as shown in the figure:



- a) a: 6, b: 2, c: 6, d: 7, e: 7, f: 8
- b) a: 1, b: 2, c: 2, d: 3, e: 4, f: 2
- c) a: 6, b: 7, c: 6, d: 7, e: 7, f: 8
- d) **a: 6, b: 7, c: 6, d: 7, e: 8, f: 9**

21. The Chandy-Lamport global snapshot algorithm works correctly for non-FIFO channels.

- a) True
- b) **False**

22. Find out the correct property to solve mutual exclusion in distributed system: Property 1: At most one process executes in critical section at any time

Property 2: Every request for a critical section is granted eventually

Property 3: Requests are granted in the order they were made

- a) Property 1: Liveness, Property 2: Fairness, Property 3: Safety
- b) Property 1: Safety, Property 2: Fairness, Property 3: Liveness
- c) Property 1: Fairness, Property 2: Safety, Property 3: Liveness
- d) **Property 1: Safety, Property 2: Liveness, Property 3: Fairness**

23. Consider the following statements:

Statement 1: Lamport's algorithm achieves mutual exclusion.

Statement 2: Lamport's algorithm is fair.

- a) Only statement 1 is true
- b) Only statement 2 is true
- c) **Both statements are true**
- d) Both statements are false

24. _____ provides Advisory locks only and doesn't guarantee mutual exclusion unless every client checks lock before accessing resource.

- a) Paxos
- b) Cassandra
- c) **Google's Chubby**

- d) Microsoft Azure
25. Consider the following statement: “In Suzuki-Kasami’s Broadcast Algorithm, if a site does not hold the token when it makes a request, the algorithm requires $5N-1$ messages to obtain the token.”
- a) True
 - b) **False**
26. Which of the following for Mutual exclusion can be provided by the
- a) mutex locks
 - b) binary semaphores
 - c) **both mutex locks and binary semaphores**
 - d) none of the mentioned
27. Suzuki-Kasami's Broadcast Algorithm is an
- a) Non- token based algorithm.
 - b) **Token based algorithm.**
 - c) Centralized Based algorithm
 - d) physical clock synchronization algorithm.
28. Which mutual exclusion algorithm works when the membership of the group is unknown?
- a) **Centralized.**
 - b) Ricart-Agrawala.
 - c) Lamport.
 - d) Token Ring.
29. In distributed system, each processor has its own _____
- a) **local memory and clock**
 - b) Battery
 - c) Remote Memory
 - d) Display
30. In _____ only one process at a time is allowed into its critical section, among all processes that have critical sections for the same resource.
- a) **Mutual Exclusion**
 - b) Synchronization
 - c) Deadlock
 - d) Starvation