L4 Deadlocks

1. Which condition is NOT a necessary condition for deadlock?

A) Mutual exclusion
B) Hold-and-wait
C) Starvation
D) Circular wait
Answer:

2. In a Resource-Allocation Graph (RAG), a deadlock is certain if:

A) There is a cycle and each resource has multiple instances
B) There is no cycle
C) There is a cycle and all resources have single instances
D) A thread requests two resources simultaneously
Answer:

3. In a Resource Allocation Graph (RAG) with a cycle and multi-instance resources:

A) Deadlock is certain
B) Deadlock is impossible
C) Deadlock is possible but not certain
D) Starvation must occur
Answer:

4. Spooling helps prevent deadlocks by addressing which condition?

A) Hold-and-wait
B) Mutual exclusion
C) Circular wait
D) No preemption
Answer:

5. In the Dining Philosophers problem, deadlock can be prevented by:

A) Allowing philosophers to take forks in any order
B) Using the Ostrich algorithm
C) Ensuring one philosopher picks up forks in reverse order
D) Adding more philosophers
Answer:

6. A system is in a safe state if:

A) All resources are fully allocated
B) There exists a safe sequence where all processes can complete execution

C) No circular wait exists
D) Resources are preemptible
Answer:

7. Starvation differs from deadlock because:

A) Starvation involves circular waiting
B) Deadlock involves circular waiting
C) Starvation cannot occur in priority-based systems
Answer:

8. A communication deadlock occurs when:

A) Threads wait for shared resources
B) Messages are lost in a network
C) Resources are non-preemptible
D) Circular waits form
Answer:

9. Which is true about the Banker’s algorithm?

A) It requires processes to declare maximum resource needs
B) It does not require processes to declare maximum resource needs
C) It prioritizes low-resource threads
D) It uses spooling for printers
Answer:

10. In Banker's algorithm, an unsafe state indicates:

A) The current system state is deadlocked
B) Potential for future deadlock if resources are allocated
C) All processes have exceeded their maximum claims
D) System must preempt resources immediately
Answer: