

OPERATING SYSTEM

Solutions

1. A system has a resource 'Z' with 20 instances; each process needs 5 instances to complete its execution. What is the minimum process in the system that may cause deadlock?

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|--------|-------|
| (a) 4 | (b) 5 |
| (c) 10 | (d) 6 |

Solution: Option (b)

2. A system has 'n' processes and each process need 2 instances of a resource. There are n+1 instances of resource provided. This could:

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|-----------------------------|---------------------------------------|
| (a) lead to deadlock | (b) lead to starvation & the deadlock |
| (c) never leads to deadlock | (d) none |

Solution: Option (c)

3. There are 'm' processes and 'n' instances of a Resource provided. Each process needs 'P' instances of the resource. In which case deadlock will never occur?

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|----------------------------|----------------------------|
| (a) $(P - 1) m + 1 \leq n$ | (b) $(P - 1) m \leq n + 1$ |
| (c) $(P - 1) m + 1 < n$ | (d) $(P - 1) m \leq n + 1$ |

Solution: Option (a)

4. There are 5 processes and 10 instances of a Resource. If each process needs 'P' instances which is the minimum value of 'P' for the deadlock to occur?

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|-------|-------|
| (a) 1 | (b) 2 |
| (c) 3 | (d) 4 |

Solution: Option (c)

5. There are 10 processes and 31 instances of a Resource. If each process needs '4' instances of the resource, this could:

- | | |
|----------------------|-------------------------------|
| (a) Lead to deadlock | (b) Deadlock will never occur |
|----------------------|-------------------------------|

(c) Deadlock might occur

(d) None

Solution: Option (b)

6. If a process is in safe state, then:

(a) It will never go to deadlock

(b) It might lead to deadlock

(c) It will definitely lead to deadlock

(d) None

Solution: Option (a)

7. If a process is in unsafe state, then:

(a) It is in deadlock

(b) It might successfully complete

(c) It will lead to deadlock

(d) None of the above

Solution: Option (b)

8. In a single instance Resource allocation graph (Wait for graph) cycle is a:

(a) Necessary condition for deadlock

(b) Sufficient condition for deadlock

(c) Unpredictable situation for deadlock

(d) None of the above

Solution: Option (b)

9. In a Multiple instance Resource allocation graph, cycle is a:

(a) Necessary condition for deadlock

(b) Sufficient condition for deadlock

(c) Unpredictable situation for deadlock

(d) None of the above

Solution: Option (a)

10. Consider 3 Processes P_1 , P_2 and P_3 and 3 Resources R_1 , R_2 and R_3 and each process needs 2 instances of all the resources. This could:

(a) lead to deadlock

(b) deadlock will never occur

(c) can't say due to insufficient data

(d) none

Solution: Option (c)