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OS (2m)

(1) Define deadlock?

A set of Blocked process each holding a resource and waiting to acquire a resource held by another process in set.

Types: (i) Deadlock prevention.
(ii) Deadlock Avoidance
(iii) Deadlock Detection
(iv) Recovery from deadlock.

(2) Deadlock prevention? Name the methods available for PD?

Deadlock prevention: Restrain the Request can be made.

(i) mutual exclusion
(ii) Hold & wait
(iii) No premption
(iv) Circular wait.

(i) ME: mutual exclusion is not required for shared resources, it must hold for non shared resources.
(ii) Hold & wait: must Guaranty that whenever the process request a Resource it does not hold any other Resources
(iii) No premption: If a process, is holding Some Resources and Request another Resources that can't be immediately allocated to a then All resources currently being held or released.

→ premptive Resources are added to the list of Resources for which the process is waiting.
→ process will be re-started After getting old & new resources.

(iv) Circular wait -

Impose of the total ordering all Resources types and each process should request Resource in increasing order.

Tape drive - 5
↓
disk drive - 8
↓
Printer - 12 (Instances)

(3) what are the two atomic operations in semaphore?

→ wait and signal are " " "

(4) critic.

(4) (1) Mutual - Exclusion
(2) process solution
(3) Bound waiting.

(8) → Is it possible to have dL with Single process? Justify?

(A) No, it is not possible to have a deadlock involving in one process, The dL involves a circular "hold and wait." Condition two or more process, so one process can't hold a resource, yet be waiting for another resources that is holding, so for one process, deadlock can't be possible.

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RANKA

(9) List out the memory Allocation Startegies?

Ans: i) memory Allocation first Bit, Best fit, worst fit
ii) fragmentation, internal, external fragmentation.
iii) Paging.