

Important Questions (MID-2)	
COURSE: B. Tech R19	YEAR: II – II Semester
BRANCH: IT	SUBJECT: OPERATING SYSTEMS

UNIT – 3: Principles of Deadlock

1. a. What are the necessary conditions for the occurrence of deadlock?
b. Write about characterization of deadlock by resource allocation graph?
2. What is a Deadlock? How to detect deadlock?
3. Explain various methods used to recover from deadlock after detection algorithm detects the deadlock?
4. Explain about Deadlock avoidance algorithms in detail?
5. Consider the snapshot of the system processes P1, P2, P3, P4, P5, resources A, B, C, D. Allocation {0 0 1 2, 1 0 0 0, 1 3 5 4, 0 6 3 2, 0 0 1 4} Max {0 0 1 2, 1 7 5 0, 2 3 5 6, 0 6 5 2, 0 6 5 6} Available {1 5 2 0}
What is the content of Need matrix? And find out is the system in safe state?

UNIT – 4: Memory Management, Virtual Memory Management

1. a. What is a Page Fault? Explain the steps involved in handling a page fault with a neat sketch? (pg no: 18 unit-3)
b. What is paging? Explain the hardware support given for paging.
2. What is fragmentation? Explain the differences between internal and external fragmentation.
3. Discuss in detail about different types of page table structures? (practice diagrams)
4. What is the need of Page replacement? Discuss about different types of Page replacement algorithms.
5. a. Discuss various issues related to the allocation of frames to processes?
b. What is the cause of Thrashing? How does the system detect Thrashing? How to eliminate this problem?

UNIT – 5: File System Interface, Implementation, Mass storage structure

1. a. Describe in detail about tertiary storage structure or Mass storage structure.
b. Explain various file access methods with suitable examples.
2. Briefly explain about single-level, two-level and Tree-Structured directories.
3. Explain various file allocation methods with suitable examples.
4. A. Explain File Free Space management approaches.
b. Write short note on Swap space management.
5. Explain in detail about various ways of accessing disk storage.
6. Suppose the read-write head is at track 90, moving towards track 299 (the highest numbered track on the disk) and disk request queue contains read/write requests for sectors on tracks: 86, 242, 171, 26, 281, 92, 13, and 150 respectively. What is the total number of head movements to satisfy the requests in the queue using: (i) FCFS (ii) SSTF (iii) SCAN (iv) C-SCAN