

BCA(H) SEM III Examination 2021
Subject : Computer Application
Paper : BCA 301

FM 80

Time: 3H

A. Answer any six questions

6X5=30

1. What is deadlock? State the conditions for deadlock. 1+5
2. What is a process? Discuss process state transition diagram 1+5
3. Define Virtual address . Explain the differences between internal and external fragmentation. 2+4
4. Explain with example , how critical problem arises when two or more processes try to access a shared variable concurrently. 6
5. Discuss any one algorithm to solve a critical section problem. 6
6. What are the methods of file allocation? Discuss Indexed allocation method with example. 2+ 4
7. Compare Contiguous and Link file allocation methods. 6
8. Write short notes on Spooling and Overlay.

B. Answer any five questions

5X10=50

1. What are the different ways of preventing dead lock?
2. Explain Multilevel Queue Scheduling and Multi Level feedback Queue Scheduling algorithm ?
3. Consider the following page reference string

1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6

How many page faults would occur for the following page replacement algorithm assuming four (4) frames? Remember that all frames are initially empty so your unique pages will all cost one fault each.

a) FIFO replacement.

c) Optimal replacement.

4. Suppose that a disk drive has 5000 cylinders, numbered 0 to 4999. The drive is currently serving a request at cylinder 143 and the previous request was at cylinder 125. The queue of pending requests in FIFO order is :

86,1470,913,1774,948,1509,1022,1750,130

What is the total distance that the disk arm moves to satisfy all pending requests for each of the following disk scheduling algorithms?

FCFS, SSTF, SCAN, LOOK

5. Define Page fault. What are the steps taken by operating system when page fault occur?
6. Discuss different Memory Management Techniques.
7. Write short notes (any two)
 - (i) Network and distributed Operating system
 - (ii) Monolithic System
 - (iii) Batch processing and time sharing