

MCA-11 Operating System

SET : 1

Section-A

(Very Short Answer Questions)

1. (i) What is Operating System?
- (ii) What is Batch Processing System?
- (iii) What are loosely coupled systems?
- (iv) What does PCB contain?
- (v) Define semaphores.
- (vi) Define race condition.
- (vii) Define seek time and latency time?
- (viii) Define spooling.
- (ix) What is Demand paging?
- (x) Define dynamic linking.

Section-B

(Short Answer Questions)

2. Difference between multiprogramming and Time Sharing System.
3. What are the 3 different types of scheduling queues?
4. What is process and Explain different states of a process.
5. Give an overview about threads.
6. Write about the techniques for structuring the page table.
7. What is thrashing and explain the methods to avoid thrashing?
8. What are the various page replacement algorithms used for page replacement.
9. Write in detail about Virtual memory.

Section-C

(Long Answer Questions)

10. Give the condition necessary for a deadlock situation to arise. Explain in detail
11. How deadlock is prevented. Explain using example
12. Explain different Disk Scheduling Algorithm with example.
13. Implement following memory allocation policies with given data
 - (i)FCFS
 - (ii)First Fit
 - (iii)Best FitAvailable memory: 35 units
OS : 10 units
User process : 25 units.

MCA-11 Operating System

SET : 2

Section-A

(Very Short Answer Questions)

1. (i) Define Mutual Exclusion.
(ii) What are the necessary conditions of deadlock?
(iii) What is dispatcher?
(iv) Define caching.
(v) Define buffering.
(vi) Define seek time.
(viii) What is Kernel?
(viii) Define logical address and physical address.
(ix) Define Segmentation
(x) What are benefits of Multithreading?

Section-B

(Short Answer Questions)

2. What is a file pointer? Briefly explain the various operation of a File.
3. What are the different types of Multiprogramming Operating System.
4. Explain Master Slave model in detail.
5. What is distributed System, list all for of transparency and Explain them
6. Explain Security model of Distributed System.
7. Explain different types of Scheduler?
8. Write notes about disk management and swap-space management.
9. Write in detail about File-System Implementation.

Section-C

(Long Answer Questions)

10. Explain how mutual exclusion is achieved using Semaphore.
11. Write about the various CPU scheduling algorithms.
- 12.
13. Consider the following set of process, with the length of the CPU-burst time given in milliseconds:

Process	Burst time	Priority
P1	10	3
P2	1	1
P3	2	3
P4	1	4
P5	5	2

The processes are assumed to have arrived in the order p1, p2, p3, p4, p5, all at time 0

a) Draw four Gantt charts illustrating the execution of these process using FCFS, SJF,

a nonpreemptive priority (a smaller priority number implies a higher priority), and RR (quantum=1) scheduling.

b) What is the turnaround time of each process for each of the scheduling algorithms in part a?

c) What is the waiting time of each process for each of the scheduling algorithms in part a?

d) Which of the schedules in part a results in the minimal average waiting time (over all processes)?