



**B.Tech II Year II Semester Supplementary Examinations, September 2023**  
**Operating Systems**  
(CSE)

**Maximum Marks: 70**

Date:19.09.2023 Duration: 3 hours

- Note:
1. This question paper contains two parts A and B.
  2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
  3. Part B consists of 5 Units. Answer any one full question from each unit.
  4. Each question carries 10 marks and may have a, b, c, d as sub questions.

**Part-A**

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Give two reasons why caches are useful. What problems do they solve ?
- 2 Write about bootstrap program?
- 3 Define protection and security
- 4 Write the system calls fork() and exec().
- 5 Write about semaphores
- 6 Define processor affinity
- 7 What are different ways of handling deadlocks
- 8 Define deadlock
- 9 Define paging
- 10 Write the access matrix in few words.

**Part-B**

Answer All the following questions.

(5X10M=50Marks)

- 11 Outline the computing environments in detail. [10]  
OR
- 12 Explain the following a)process management      b)Memory management [5+5]
- 13 Explain critical section problem & what is software based solution to it explain. [10]  
OR
- 14 a) Consider the following set of processes with the length of the CPU burst time given in milliseconds  

Process	BurstTime
P1	24
P2	3
P3	3

The processes are assumed to have arrived in the order p1, p2, p3 all at time 0.  
Draw Gantt charts illustrating the execution of these processes using Round Robin (quantum=4) scheduling.

b) explain FCFS scheduling algorithm with suitable example. [5+5]
- 15 Explain the various methods which we apply for recovery from deadlocks. [10]  
OR

- 16 Write a short note on a) Hierarchical paging and b) Hashed page table [5+5]
- 17 a) Summarize the concept of demand paging.  
b) Write a short note on performance of demand paging. [5+5]
- OR
- 18 a) Illustrate the concept of copy on write.  
b) Explain the concept of virtual memory on windows. [5+5]
- 19 a) Explain the access methods of files.  
b) Briefly outline the directory overview. [5+5]
- OR
- 20 a) Explain the concept of revocation access rights.  
b) Explain the concept of goals of protection. [5+5]