

- (ii) FIFO Replacement
- (iii) Optimal Replacement. **15**

6. (i) What do you mean by a page fault ? Describe the possible actions to be taken by the operating system when a page fault occurs. **8**
- (ii) Explain the disadvantages of demand paging. **7**

Unit IV

7. (i) Draw and explain the distributed file system. Write the challenges faced during management of distributed file system. **10**
- (ii) List the tasks performed by application IO interface. **5**
8. Explain, why is deadlock state more critical than starvation ? Write and explain the Banker's algorithm for deadlock avoidance for multiple resource classes. **15**

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B. Tech. EXAMINATION, June 2023

(Fourth Semester)

(C Scheme) (Main & Re-appear)

(CSE)

CSE204C

OPERATING SYSTEMS

Time : 3 Hours]

[Maximum Marks : 75

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (i) Write and explain *five* functions of network operating system. **10**
(ii) Differentiate between monolithic kernel and micro kernel operating systems. **5**
2. Write and explain the advantages of using the concept of a virtual machine. Also list the security risks involved in using a VM. **15**

Unit II

3. (i) Explain the terms CPU-burst and I/O-burst. Also give some suitable examples of each. **8**
(ii) Why is the round robin algorithm said to be unfair to I/O bound processes compared to CPU-bound processes ? **7**
4. For the set of processes given below (The processes arrive in given order and at time 0.) :

Process	Burst time (ms)	Priority
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P1	10	3
P2	1	1
P3	2	3
P4	1	5
P5	5	2

Draw Gantt Charts illustrating the execution of processes using FCFS, SJF, non-preemptive priority and RR scheduling. Calculate turnaround time and waiting time of each process for each of the algorithm. **15**

Unit III

5. 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 following replacement algorithms assuming 3, 4, 5 frames ? All frames are initially empty :
(i) LRU Replacement