

UG 3rd Semester Examination 2021
Computer Science (Honours)

Paper- DC-6a
Operating System
[CBCS]

Full Marks: 25

Time: 2 Hours

The figures in the margin indicate full marks.

Group -A

(2 × 5=10)

Answer any five questions.

1. (a) What is mutual exclusion?
- (b) What is the difference between a single-threaded process and a multi-threaded process?
- (c) What is shared memory IPC?
- (d) Differentiate between independent and co-operating processes.
- (e) What is context switching?
- (f) What is rotational latency?

Group -B

(5 × 3=15)

Answer any three questions.

2. Explain the optimal page replacement algorithm with an example. 5
3. What is contiguous file allocation method? Explain the life cycles of a process. (2.5+2.5)
4. Consider the following set of processes:

Process	Burst Time
P ₁	6
P ₂	5
P ₃	2
P ₄	1

- a) Draw the Gantt charts illustrating the execution of these processes using Round Robin scheduling. Assume time quantum = 2.
- b) Calculate the average waiting time and turned around time. (3+2)
5. Write a short note (any one): 5
 - (a) Resource Allocation Graph
 - (b) Shortest Seek Time First (SSTF) Disk Scheduling Algorithm