

PG
M.SC Semester-III Examination, 2022
COMPUTER SCIENCE
PAPER: COS 301
(ADVANCED OPERATING SYSTEM)

Full Marks: 40

Time: 2 Hours

GROUP-A

1. Answer any **FOUR** questions of the following: 4×2=8
- a) What is the difference between thread and process?
 - b) Define the seek time and latency time.
 - c) What is semaphore? What do you mean by critical section?
 - d) Compare LOOK and CLOOK algorithm.
 - e) What is the difference between multiprogramming and multitasking?
 - f) What is real time system?
 - g) What is open source OS?
 - h) What is context switch?

GROUP-B

2. Answer any **FOUR** questions of the following: 4×4=16
- a) Discuss about PCB.
 - b) Explain with a suitable diagram about different state of a process.
 - c) Consider the following process with its corresponding arrival and burst time:

Process	Arrival time	Burst Time
P1	0	8
P2	1	4
P3	2	9
P4	3	5

- Calculate average waiting time and turnaround time.
- d) Explain segmentation hardware with help of a diagram.
 - e) What is Deadlock? Describe required criteria for Deadlock.
 - f) What is fragmentation? Explain internal and external fragmentation.
 - g) Explain distributed OS.
 - h) Discuss about context switching.

P.T.O.

GROUP-C3. Answer any **TWO** questions of the following: **8×2=16**

- a. i) What are the tasks perform by the File management of OS?
 ii) Write short note on protection and Security in operating system.

4+4

- b. i) Find the number of track movement in SSTF, LOOK and C-LOOK algorithm with neat diagram for the following:

Request sequence={ 45,21,67,90,4,50,89,52,61,87,25}

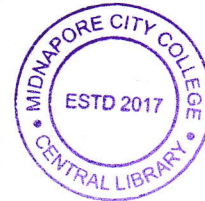
Head Position=50

Track ranging 0 to 99

- ii) What is segmentation?
 c. i) What is starvation? Suggest its solution.
 ii) Consider the following set of processes:

6+2

Process	Arrival Time	Burst Time
P1	0	10
P2	1	6
P3	2	8
P4	3	4



Draw a Gantt Chart and calculate the average waiting time, execution time and turnaround time FCFS and shortest remaining time first scheduling algorithm.

2+6

- d. i) What is virtual memory?
 ii) Explain demand paging.
 iii) Explain medium term scheduler with a diagram.

1+3+4
