

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (Information Technology) (Sem.-4)

**OPERATING SYSTEMS**

Subject Code : BTIT-402-18

M.Code : 77539

Date of Examination : 14-07-22

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

1. Write briefly :

- a) What is the functioning of System Call?
- b) How context switching is used in multiprogramming?
- c) What is Preemptive scheduling?
- d) What are different states of process?
- e) Write advantages of paging.
- f) Define critical section.
- g) What is External fragmentation?
- h) Write the use of Semaphores.
- i) Discuss Interrupt handlers.
- j) How C-SCAN algorithm works?

## SECTION - B

2. What is need of Threads? Discuss the types of Threads.
3. Find Waiting Time and Turnaround time for given process using FCFS and SCF algorithms

Process	Arrival Time (ms)	Burst Time (ms)
P1	1	5
P2	2	5
P3	2	6
P4	3	2

4. Write overview of Process Synchronization. Discuss the mechanisms to ensure synchronized execution of processes.
5. Explain the concept of Dining Philosopher problem in Operating System.
6. How page replacement algorithms are used in virtual memory?

## SECTION-C

7. What are the features of LINUX operating System? Why LINUX is secure operating system?
8. a) Write different access methods.  
b) Explain different allocation methods used in File Management.
9. Discuss necessary and sufficient conditions for Deadlock. Write the deadlock detection and recovery strategies.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**