

4th Semester B.Tech. Mid Term Examination 2022-23

**OPERATING SYSTEMS(BTCS-T-OE-036)**

**BRANCH(S) - Electrical & Electronics Engineering, Electronics & Communication Engineering**

Duration: 01:30 hr

Full Marks: 25

**1 Answer All**

- a What is the difference between multiprogramming and multitasking? 2
- b Differentiate between Application software and system software. 2
- c What do you mean by context switching? Why it is required and does it affect the system performance? 2

**2 Answer All**

- a Explain the 4 major components of a computer system and the role of the operating system in it. 3
- b What is a system call? Discuss the different types of system calls with examples. 3
- c Differentiate between user-level threads and kernel-level threads with suitable examples. 3

**3 Answer any One**

- a Explain any five major services provided by an operating system. 5
- b Write short notes on- 5
  - (i) Multi-tasking Operating System
  - (ii) Distributed Operating System

**4 Answer any One**

- a Consider the following set of processes, with their CPU burst time, arrival time (time in milisec) and priority. 5

Process	CPU Burst Time	Arrival Time	Priority
P1	5	0	2
P2	2	2	1
P3	8	3	4
P4	1	3	3
P5	3	5	1

Draw Gantt charts and determine the average waiting time and average turnaround time of the processes when executed by using RR (quantum = 2), Preemptive SJF, Preemptive priority scheduling.

- b Draw the Gantt chart and find the average waiting time and average turnaround time using FCFS, RR (time quantum=4 ms), SJF and SRTF scheduling algorithms. 5

Process	Burst Time	Arrival Time
P1	9	1
P2	11	0
P3	3	2
P4	5	4