Reg. No.:

Name :

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Mid-Term Examinations, October 2021

Programme	:	**B.Tech – Computer Science and Engineering**	Semester	:	**Fall 2021-2022**
Course	:	**Operating Systems**	Code	:	**CSE3003**
Faculty	:	**Dr. R Thilagavathy**	Slot/Class No.	:	**F11+F12+F13/0432**
Time	:	**1½ hours**	Max. Marks	:	**50**

Answer all the Questions

Q. No.	Question Description	Marks
1	List any five services provided by an OS and explain how each creates convenience for the users. **Discover** the situations in which it would be impossible for a user-level program to provide these services?	**10**
2	Give reasons why caches are useful. What problems do they solve and cause? If a catch can be made as large as the device (memory device) for which it is catching then can we make it that much large and eliminates the device. Give your answer with **justification**.	**10**
3	State critical section problem? **List** the three requirements needed to solve the critical section problem.	**5**
4	**Outline** the actions taken by the kernel to context-switch between processes.	**5**
5	**Summarize** the different possible ways through which the parameters are passed to the operating system from the User Application? **Discuss** the advantages and disadvantages of each method.	**10**
6	Consider the following set of processes, with the length of the CPU-burst time given in milliseconds: Process Burst Time Arrival Time Priority P1 10 0 3 P2 1 2 1 P3 2 1 3 P4 1 1 4 P5 5 3 2 a. **Sketch** Gantt charts illustrating the execution of these processes using FCFS, SJF, a preemptive priority (a smaller priority number implies a higher priority), and RR (quantum = 2) scheduling. b. **Compute** the Turnaround time & Waiting time of each process for each of the scheduling algorithms in part-a. c. **Show** which of the schedules in part-a results in the minimal average waiting time(overall processes)	**10**

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