Roll No: | | | | | | | | | | | |

GAIN MORE KNOWLEDGE
REACH GREATER HEIGHTS

PRESIDENCY UNIVERSITY

Presidency University Act, 2013 of the Karnataka Act No. 41 of 2013 | Established under Section 2(f) of UGC Act, 1956
Approved by AICTE, New Delhi | Approved By BCI
Bengaluru

Mid Term Examinations - October 2026

Date: 05/10/2026 **Time:** 02:00 PM - 03:30 PM

Course Code: CSS2269 **Course Name:** Operating Systems

Semester: Fifth Semester **Max. Marks:** 50 **Weightage:** 50%

CO - Levels	CO1	CO2
Marks	90	90

PART A: Answer Following Questions. 10 M

Q.N.	Questions	M	CO	BT
1	Differentiate between a system call and a function call?	2	CO1	BT2
2	Define an interrupt?	2	CO1	BT2
3	A parent process creates a child process and then waits for the child to finish. Identify the system calls involved in this operation?	2	CO2	BT3
4	A process arrives at **2 ms** and finishes at **10 ms**. Calculate its turnaround time?	2	CO2	BT3
5	A server needs to handle multiple client requests simultaneously. Which concept can be used to achieve this?	2	CO2	BT3

PART B : Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
6	Explain the different types of system calls and describe their functions with suitable examples?	10	CO1	BT2
7	A parent process creates two child processes. Apply the concepts of process creation and termination to explain the sequence of operations. Show the process hierarchy using a process tree and identify the relevant system calls?	10	CO2	BT3

PART C: Answer Any 1 Following Questions. 10 M

Q.N.	Questions	M	CO	BT
8	Explain the different services provided by an Operating System and describe how each service supports users and application programs?	10	CO1	BT2
9	1. **Consider the following processes:** **Process Arrival Time Burst Time** P1 0 5 P2 1 3 P3 2 4 P4 3 2 **Apply FCFS scheduling and draw the Gantt chart. Calculate the waiting time and turnaround time for each process and their averages.**	10	CO2	BT3

PART D: Answer Any 1 Following Questions. 10 M

PTO (Please Turn Over)

Q.N.	Questions	M	CO	BT
10	Explain the different approaches to Operating System structure. Discuss the monolithic, layered, and microkernel approaches?	10	CO1	BT2
11	2. **Consider the following processes, all arriving at time 0:** **Process Burst Time** P1 7 P2 3 P3 5 P4 2 **Apply non-preemptive SJF scheduling. Draw the Gantt chart and calculate the waiting time and turnaround time for each process?**	10	CO2	BT3

PART E: Answer Any 1 Following Questions. 10 M				
Q.N.	**Questions**	**M**	**CO**	**BT**
12	Explain the process of converting a source program into an executable program. Discuss the roles of the compiler, linker, and loader, and differentiate between static and dynamic linking?	10	CO1	BT2
13	Consider the following processes: P1 (AT=0, BT=6), P2 (AT=1, BT=3), P3 (AT=2, BT=4), and P4 (AT=3, BT=2). Apply the FCFS scheduling algorithm. Draw the Gantt chart and calculate the completion time, turnaround time, and waiting time for each process. Also calculate the average waiting time and average turnaround time.	10	CO2	BT3