Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – October 2025

Date: 08-10-2025 **Time:** 02.00pm to 03.30pm

School: SOIS	**Program:** BCA	
Course Code : CSA2506	**Course Name:** Operating System and Unix Programming	
Semester :III	**Max Marks**:50	**Weightage**:25%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	**24**	**26**	**-**	**-**	**-**

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **5Q x 2M=10M**

1	List any two Goals of an Operating System.	**2 Marks**	**L1**	**CO1**
2	Write any two types operating system.	**2 Marks**	**L1**	**CO1**
3	Define a process in an operating system.	**2 Marks**	**L1**	**CO2**
4	List the different states of a process.	**2 Marks**	**L1**	**CO2**
5	Expand FCFS and SJF scheduling.	**2 Marks**	**L1**	**CO2**

Part B

Answer the Questions. **Total Marks 40M**

6.	**a.**	Explain different types of operating systems with suitable examples.	**10 Marks**	**L1**	**CO1**
	b.	What are system services? Explain any five in detail.	**10 Marks**	**L1**	**CO1**
OR					
7.	**a.**	Describe different types of operating system architectures (monolithic, layered, microkernel) with neat diagrams.	**10 Marks**	**L1**	**CO1**

	b.	Explain dual-mode operation. Differentiate between user mode and kernel mode.	**10 Marks**	**L1**	**CO1**

8.	**a.**	Explain the different states of a process with a neat diagram.	**10 Marks**	**L1**	**CO2**
	b.	Consider 4 processes with the following **arrival time** and **burst time**: **Process** **Arrival Time** **Burst Time** P1 0 ms 5 ms P2 1 ms 3 ms P3 2 ms 8 ms P4 3 ms 6 ms Using FCFS Scheduling, calculate: 1. The Gantt Chart 2. Waiting Time (WT) for each process 3. Turnaround Time (TAT) for each process 4. The Average Waiting Time and Average Turnaround Time	**10 Marks**	**L3**	**CO2**
		OR			
9.	**a.**	Explain Inter-Process Communication (IPC) and describe its methods (message passing & shared memory).	**10 Marks**	**L1**	**CO2**
	b.	Consider the following 5 processes with their arrival time and burst time: Process Arrival Time Burst Time P1 0 ms 7 ms P2 2 ms 4 ms P3 4 ms 1 ms P4 5 ms 4 ms P5 6 ms 2 ms Using Non-Preemptive SJF Scheduling, calculate: 1. The Gantt Chart 2. Waiting Time (WT) for each process 3. Turnaround Time (TAT) for each process 4. The Average Waiting Time and Average Turnaround Time	**10 Marks**	**L3**	**CO2**