VIT-AP UNIVERSITY	Continuous Assessment Test 1 – Fall Sem (2025-26) – AUG 2025	
	Maximum Marks: 50	Duration: 90 Mins
Course Code: CSE2008	Course Title: Operating Systems	
Set No: 7	Exam Type: Closed Book	School: SCOPE
Date: 19/08/2025	Slot: B1	Session: FN

Keeping mobile phone/smart watch, even in 'off' position is treated as exam malpractice

General Instructions if anyClosed Book:

1. **"fx series" - non Programmable calculator are permitted : YES**
2. **Reference tables permitted : NO**

PART – A: Answer ALL Questions, Each Question Carries 10 Marks (5×10=50 Marks)

1. Give two reasons why caches are useful. What problems do they solve? What problems do they cause? If a cache can be made as large as the device for which it is caching (for instance, a cache as large as a disk), why not make it that large and eliminate the device? **(10M)**

2. Group of engineers is building a cloud-based file editing application that allows multiple users to log in, open files stored on a remote server, edit them collaboratively, and save the changes. During this phase, identify the types of system calls used and explain each of them in detail. **(10M)**

3. Discuss the various process states in an operating system. Provide a clear explanation of each state and depict the transitions between them with the help of a well-labeled process state diagram. **(10M)**

4. CPU scheduling system uses the Round Robin algorithm with a time quantum of 3 ms. Five processes arrive at time 0 with the following burst times:

Process	Burst Time (ms)
P1	10
P2	4
P3	5
P4	7
P5	3

- Construct the Gantt chart for process execution. **(4M)**
- Calculate the Turnaround Time (TAT) and Waiting Time (WT) for each process. **(4M)**
- Compute the average TAT and average WT. **(2M)**

5. Consider the following FCFS Scheduling, set the processes that arrive at time 0, with their burst times given:

Process	Arrival Time (ms)	Burst Time (ms)
P1	0	5
P2	2	3

Process	Arrival Time (ms)	Burst Time (ms)
P3	4	8
P4	5	6

1. Arrange the processes in the order of execution according to the FCFS scheduling algorithm. **(2M)**
2. Draw the Gantt chart for the given data. **(3M)**
3. Calculate the Completion Time (CT), Turnaround Time (TAT), and Waiting Time (WT) for each process. **(3M)**
4. Find the average TAT and average WT. **(2M)**

QP MAPPING

Q. No.	E/A/T	Module Number	Marks	BL	CO Mapped	PO Mapped	PEO Mapped	PSO Mapped
Q1	T	1	10	3	1	1,2	1,2	
Q2	E	1	10	1	1	1,2	1,2	
Q3	E	1	10	2	1	1,2,3	1,2,3	
Q4	A	2	10	2	2	1,2.3	1,2,3	
Q5	A	2	10	2	2	1,2,3	2,3	