VIT
Vellore Institute of Technology

			SLOT : B2
School of Information Technology and Engineering			
Winter Semester 2022-2023			Continuous Assessment Test – I
Programme Name & Branch		MCA	
Course	ITA5006	Course	Distributed Operating Systems
Class	VL2022230500270 , VL2022230500524, VL2022230500243		
Faculty	Dr.M.RAJKUMAR, Dr.T.SENTHIL KUMAR, Dr.D.KARTHIKEYAN		

Exam Duration: 90 Min. **Maximum Marks: 50**

General instruction(s): Answer ALL Questions.

Q.No.	Question	Max. Marks
1.	(a) Identify the best choice scheduling algorithm for the following cases and justify your answer. **Case 1:** The incoming processes are short and there is no need for the processes to execute in a specific order. (2 marks) **Case 2:** The processes are a mix of long and short processes and the task will only be completed if all the processes are executed successfully in a given time. (2marks) **Case 3:** The processes are a mix of user based and kernel-based processes. (2 marks) (b) Compare and contrast the various scheduling algorithms highlighting their advantages and disadvantages. (4 marks)	10
2.	Experiment the various classical problems depicting flaws of process synchronization in systems where cooperating processes are present. Explain with the help of pseudocode.	10
3.	Consider the following process with the CPU burst time givenin milliseconds.	10

Process	Arrival Time	Burst time	Priority
P1	0	10	4
P2	1	4	2
P3	2	12	1
P4	4	5	3

Process arrives in P1, P2, P3, P4 order, all process arrives at 0 msec.

i) Draw Gantt chart to show execution using Priority, and RR (Quantum Time=2ms) Scheduling.(4 Marks)

ii) Also calculate the Average waiting time and Turnaround time. (4 Marks)

iii) Comment on the algorithm which produces minimum Average waiting time and Turnaround time. (2 Marks)

4. Assume that source and destination in the same network. One of the process in the source system wants to make a reliable communication to the one of the application in the destination system. Elaborate with the neat sketch on layer communication, protocol functionalities, encapsulation and de-capsulation happens at both sender and receiver side. **10**

5. (a) Demonstrate the need for communication primitives in Distributed OS. (5 marks) **10**

(b) Explain how remote procedure call will be implemented and how it handles the structuring and procedure call. (5 marks)