Internal Assesment Test – II

Sub:	Operating Systems							Code:		17MCA24
Date:	17.04.2018	Duration:	90 mins	Max Marks:	50	Sem:	I	Branch:		MCA

Answer Any One FULL Question from each part.

		Marks	OBE CO	RBT
Part - I				
1 (a)	Compare preemptive with non preemptive scheduling	3	CO2	L1
(b)	Discuss about the OS control structures	7	CO2	L2
2	Explain the five state process model with transition diagram, showing how to change process model for a suspend process	10	CO2	L2
Part – II				
3 (a)	What is deadlock? Explain with a small diagram. What are the necessary conditions for the deadlock to occur in a system	6	CO3	L1
(b)	Write short notes about resource allocation graph	4	CO3	L1
4	Explain reader's writer's problem and write the solution using semaphore	10	CO2	L3
PART - III				
5 (a)	Define is response time and turnaround time?	3	CO2	L1
(b)	Consider the following set of processes with given length of CPU burst:	7	CO2	L3

Processes	P1	P2	P3	P4	P5
Burst Time	6	2	8	3	4
Arrival Time	2	5	1	0	4

Draw Gantt chart for SJF (preemptive) and SFJ (non-preemptive.
Find the average waiting time, average turn around time, throughput for each scheduling algorithm.

		Marks	CO	RBT
6 (a)	Define is waiting time, throughput?	3	CO2	L1
	Consider the following set of processes with given length of CPU burst:	7	CO2	L3

Processes	P1	P2	P3	P4	P5
Burst Time	10	1	2	1	5
Priority	3	1	3	4	2

All processes arrived at time 0 in the given order.
Draw Gantt chart using SJF (non-preemptive), Priority (Non-preemptive) [Smallest number implies highest priority], and Round Robin [Quantum-2 ms] scheduling policies. Find the average waiting time for each scheduling policy.

Part – IV				
7 (a)	What is a thread? Explain the benefits of a multithreaded programming	4	CO2	L1
(b)	Explain with diagram user level threads and kernel level threads	6	CO2	L2
8	Consider the following page reference string: 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2, 1, 2, 0, 1, 7, 0, 1 Assuming 3 frames, find the number of page faults when the following algorithms are used: i) LRU ii) FIFO iii) Optimal. Note that initially all the frames are empty.	10	CO3	L1
Part – V				
9	What is demand paging? Explain how TLB improves the performance of demand paging with neat diagram	10	CO3	L1
10.	State the dining philosophers problem and give solution for the same, using semaphores	10	CO3	L3