ADAMAS UNIVERSITY PURSUE EXCELLENCE	**ADAMAS UNIVERSITY** **END-SEMESTER EXAMINATION : JANUARY 2021** (Academic Session: 2020 – 21)		
Name of the Program: (B.Tech.)	B. TECH	**Semester:** (V)	V
Paper Title :	Operating System	**Paper Code:**	ECS43103
Maximum Marks :	40	**Time duration:**	3
Total No of questions:	8	**Total No of Pages:**	2
(Any other information for the student may be mentioned here)			

Answer all the Groups

Group A

Answer all the questions of the following $5 \times 1 = 5$

1. **a)** How race condition blocks a process in action and why it do so, suggest your answer?
b) What is significance of RTOS?
c) How Context switching swap user action between user mode and kernel mode?

d) Differentiate scheduler and dispatcher?
e) Is multiprogramming beneficial to operating system or curse suggest your idea.

GROUP –B

Answer *any three* of the following $3 \times 5 = 15$

2. Explain internal fragmentation and External fragmentation with suitable example? 2.5+2.5

3. Explain FIFO page replacement technique where frame size is three and page string is (1,3,0,3,5,6,3).

4. Difference between multitasking and multi-processing.

5. (i)Explain process control block and thread control block attributes with a neat diagram.

(ii)Find Average TAT and WT of the table given below by SJF technique, built the GNATT chart of SJF to showcase scheduling action

PROCESS-ID	ARRIVAL TIME	BURST TIME
P1	1	6
P2	4	3
P3	5	2
P4	6	14
P5	9	5

GROUP –C

Answer *any two* of the following $2 \times 10 = 20$

6. A single processor system has three resource types X, Y and Z, which are shared by three processes. There are 5 units of each resource type. Consider the following scenario, where the column allocation denotes the number of units of each resource type allocated to each process, and the column request denotes the number of units of each resource type requested by a process in order to complete execution. Which of these processes will finish LAST? Table is given as below.

1.P0

2.P1

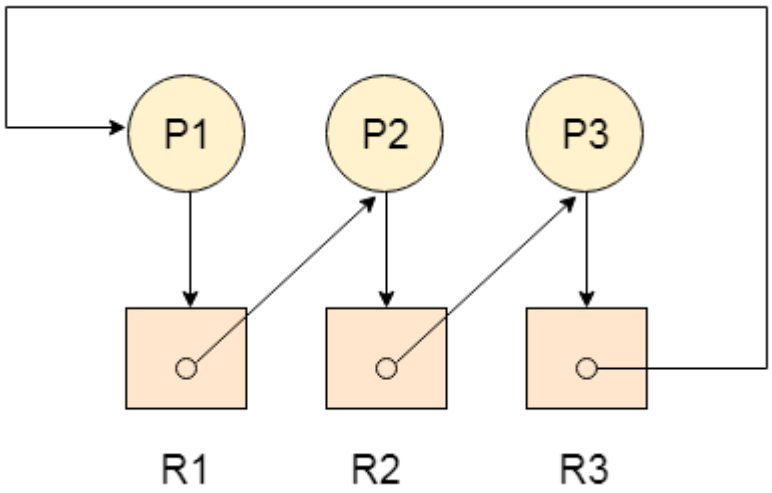
3.P2

4.None of the above since the system is in a deadlock

	Allocation			**Request**		
	X	**Y**	**Z**	**X**	**Y**	**Z**
P0	1	2	1	1	0	3
P1	2	0	1	0	1	2
P2	2	2	1	1	2	0

7. (i)Explain spooling with suitable example? 5+5

(ii)Is there any dead lock in graph given below suggest your answer how to detect dead lock



8. (i)Explain dynamic partitioning and it's advantages over fixed partioning? 5+5

(ii) Consider a main memory with five page frames and the following sequence of page references: 3, 8, 2, 3, 9, 1, 6, 3, 8, 9, 3, 6, 2, 1, 3. Use the page replacement with respect to First-In-First-out (FIFO) and Least Recently Used (LRU)?Find the number of HIT and MISS in each technique with a neat diagram.