SRINIX COLLEGE OF ENGINEERING

1st INTERNAL EXAMINATION-2021-22

Subject-**OS**   Semester-**5TH**   Branch-**CSE**

Full Mark-**60**   Time-**2.00Hrs**

ANSWER ALL QUESTIONS (PART-A)   [2X10]

1. What is Process? What are different attributes are associated with process?
2. What do you mean by Critical Section?
3. What do you mean by race condition of Process?
4. What do you mean by wait() & signal() operations?
5. Explain ready-suspended state.
6. What do you mean by Pre-emptive Scheduling?
7. What do you mean by Co-operative Process?
8. What do you mean by Starvation?
9. What do you mean by Convoy effect?
10. What are the disadvantages of SJF scheduling?

ANSWER ANY FOUR QUESTIONS (PART-B)   [5X4]

1. Explain Semaphore in Process Synchronization.
2. Explain with example: a) Internal Fragmentation & b) External Fragmentation
3. What is Dead Lock? What are necessary conditions for deadlock?
4. Explain virtual memory with its advantages and disadvantages.
5. Draw and Explain different states of Process.

ANSWER ANY TWO QUESTIONS   [10X2]

1. (a) Consider page reference string 1, 3, 0, 3, 5, 6 with 3 page frames. Find number of page faults using **FIFO** page replacement policy.

b. Consider the page reference string 7, 0, 1, 2, 0, 3, 0, 4, 2, 3, 0, 3, 2 with 4 page frames. Find number of page faults using **LRU** page replacement policy.

2. Consider a system that contains five processes P1, P2, P3, P4, P5 and the three resource types A, B and C. Following are the resources types: A has 10, B has 5 and the resource type C has 7 instances.

Answer the following questions using the banker's algorithm:

a. What is the reference of the need matrix?

b. Find out the safe sequence of the system.

Process	Allocation			Max			Available		
	A	B	C	A	B	C	A	B	C
P1	0	1	0	7	5	3	3	3	2
P2	2	0	0	3	2	2			
P3	3	0	2	9	0	2			
P4	2	1	1	2	2	2			
P5	0	0	2	4	3	3			