MODEL QUESTION PAPER

Hall Ticket No.: | | | | | | | | | | |

SRIT R20

SRINIVASA RAMANUJAN INSTITUTE OF TECHNOLOGY

(AUTONOMOUS)

III B. Tech I Sem – Semester End Examinations – Regular – Dec 2022

OPERATING SYSTEMS

[R204GA05503]

(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 60**

PART-A

(Compulsory Question)

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1		Answer the following: (10 X 02 = 20 Marks)	
	a)	Draw User Mode to Kernel Mode Transitions.	
	b)	Define Race Condition.	
	c)	Write basic replacement Algorithm.	
	d)	Classify Dimensions of Application I/O Interface.	
	e)	List Security violation methods.	

PART-B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT-1

2	a)	Exemplify open system call Scenario with a neat diagram.	**[5M]**
	b)	Illustrate operating system services with a neat block diagram.	**[5M]**
		(OR)	
3		Explain how operating systems used in a variety of computing environments.	**[10M]**

UNIT-2

4		Construct IPC for message-passing Model with a suitable example.	**[10M]**
		(OR)	
5		Construct producer-consumer problem with a suitable example.	**[10M]**

UNIT-3

6		Demonstrate the causes of trashing with a suitable diagram.	**[10M]**
		(OR)	
7		Consider the following page reference string 1,2,3,4,5,3,4,1,6,7,8,7,8,9,7,8,9,5,4,5,4,2 With four Frames. How many page faults would occur for the FIFO, Optimal page replacement algorithms? Which algorithm is efficient? (Assume all frame are initially empty)	**[10M]**

UNIT-4

8		Suppose that a disk drive has 5000 cylinders numbered 0 to 4999. The drive is currently serving a request at cylinder 143. The queue of pending requests in FIFO order 86,1470,913,1774,948,1509, 1022, 1750, 130 starting from current head position. What is the total distance that disk arm moves to satisfy all the pending request for FCFS and SSTF disk	**[10M]**

	scheduling algorithm.	
	(OR)	
9	What is File system and what are the various File access methods? Explain.	**[10M]**
	UNIT-5	
10	Explain about domains of Protection	**[10M]**
	(OR)	
11	Explain about access matrix in detail.	**[10M]**

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