

## Sixth Semester B.E. Degree Examination, Dec.2019/Jan.2020 **Operating Systems**

Time: 3 hrs

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Max. Marks:100

Note: Answer any FIVE full questions, selecting

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. 3	1 ·	at least TWO questions from each part.						
		PART - A						
	a.	What is OS? What are the common tasks performed by OS and when they are performed by OS are performed by OS and when they are performed by OS are	formed?					
9	a.	What is OS: What are the common tasks performed by OS and when they are per-	(06 Marks)					
	b.	Why are I/O bound programs given higher priorities in a multiprogramming er						
		illustrate with timing diagram?	(08 Marks)					
	c.	Explain partition based and pool based resource allocation strategies.	(06 Marks)					
2	a.	With a neat diagram, explain the Kernal based OS structure.	(08 Marks)					
	b.	Explain with a figure the working of a two layered OS structure.	(08 Marks)					
	c.	What are the functions of an OS? Explain briefly.	(04 Marks)					
	0	What are the advantages of threads over processes?	(03 Marks)					
,	a. b.	Explain four fundamental states of process with state transition diagram.	(10 Marks)					
	c.	Explain with neat diagram user-level threads.	(07 Marks)					
	C.	Explain with heat diagram dsor-level threads.	(0 / 1/11/11/11/15)					
1	a.	Describe static and dynamic memory allocation.	(05 Marks)					
	b.	Explain first fit and best fit technique used to perform a fresh allocation from a fre	e list.					
			(10 Marks)					
	c.	Compare contiguous and non-contiguous memory allocation.	(05 Marks)					
		DADE D						
		PART B	(Of Monks)					
	a.	Explain functions performed by paging hardware.	(06 Marks) (04 Marks)					
	b.	Explain "page out daemon" for handling virtual memory in UNIX OS.	,					
	c.	Find the number of page faults for the following page reference string using FIFO and LRU						
		page replacement policies assuming 3 frames. Reference string: 5, 4, 3, 2, 1, 4, 3, 5, 4, 3, 2, 1, 5	(10 Marks)					
		Reference string. 3, 4, 3, 2, 1, 4, 3, 3, 4, 3, 2, 1, 3	(10 Marks)					
5	a.	a. With the help of a neat diagram, explain the working of a linked allocation of a disk spac						
			(08 Marks)					
	b.	Compare the sequential and direct file organization.  Explain the interface between file system and IOCS.	(04 Marks)					
	c.	Explain the interface between file system and IOCS.	(08 Marks)					
	6							
7	a.	What are the functions of medium and short term schedulers?	(04 Marks)					
	b.	Compare preemptive and non preemptive scheduling.	(04 Marks)					
	c.	Describe the shortest request next (SRN) scheduling policy. Determine the	ne average					
		turnaround time and weighted turnaround time for the following set of process	sses snown					
		below:						
		Processes P <sub>1</sub> P <sub>2</sub> P <sub>3</sub> P <sub>4</sub> P <sub>5</sub>						

Processes A	$P_1$	P <sub>2</sub>	P <sub>3</sub>	P <sub>4</sub>	P <sub>5</sub>
Arrival time	0	2	3	4	8
Service time	3	3	5	2	3

(12 Marks)

Explain: (i) Direct and indirect naming (ii) Blocking and non blocking sends (06 Marks) 8 a. b. Describe buffering of interprocess messages. (08 Marks) Write short notes on mailbox. (06 Marks)