Code No: RT31055

R13

SET - 1

III B. Tech I Semester Supplementary Examinations, October/November- 2018
OPERATING SYSTEMS
(Common to Computer Science Engineering and Information Technology)

Time: 3 hours   Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	Mention the objectives and functions of an operating system.	[3M]
	b)	Define preemption and nonpreemption.	[4M]
	c)	What is Semaphore? Mention its properties.	[4M]
	d)	List the steps needed for page replacement.	[4M]
	e)	What is deadlock? What are the schemes used in operating system to handle deadlocks?	[3M]
	f)	What are the various file accessing methods?	[4M]

PART -B

2	a)	Explain the operating system structure and its functions.	[8M]
	b)	Briefly Explain the different types of systems: parallel systems, distributed systems and real-time systems?	[8M]
3	a)	Explain the steps involved in process creation and process termination.	[8M]
	b)	Demonstrate FIFO and Round Robin CPU scheduling algorithms with suitable example.	[8M]
4	a)	What is the critical section? What are the minimum requirements that should be satisfied by a solution to critical section problem?	[8M]
	b)	Give a solution for readers-writers problem using conditional critical regions?	[8M]
5	a)	Explain the concept of demand paging in detail with neat diagrams.	[8M]
	b)	Given memory partition of 100 KB, 500 KB, 200 KB and 600 KB (in order). Show with neat sketch how would each of the first-fit, best-fit and worst fit algorithms place processes of 412 KB, 317 KB, 112 KB and 326 KB (in order).	[8M]
6	a)	Explain the techniques used to prevent the deadlocks.	[8M]
	b)	Explain Banker's deadlock-avoidance algorithm with an illustration.	[8M]
7	a)	Discuss the different file allocation methods with suitable example.	[8M]
	b)	Compare and contrast free space management and swap space management.	[8M]

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