Code No: RT31055 | **R13** | SET - 1

III B. Tech I Semester Supplementary Examinations, May- 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)	Differentiate between kernel mode and user mode.	[3M]
	b)	Define multi-threading? Explain its benefits.	[4M]
	c)	What is a critical section? Give examples.	[4M]
	d)	What do you mean by page fault?	[4M]
	e)	What are the necessary conditions for deadlock?	[4M]
	f)	Compare bit map based allocation of blocks on the disk with a free block list.	[3M]

PART -B

2	a)	Explain the purpose of system calls and discuss the system calls related to process control and communication in brief.	[8M]
	b)	Explain evolution of operating systems.	[8M]
3	a)	Describe the differences among long-term scheduling. short-term, and medium-term scheduling.	[8M]
	b)	What are the components of process control block? Explain.	[8M]
4	a)	Write Peterson Algorithm for 2-process synchronization to critical section problem and discuss briefly.	[8M]
	b)	What are the semaphores? How do they implement mutual exclusion?	[8M]
5		Consider the following page reference string: 1, 2, 3, 4, 2, 1, 5, 6, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6. How many page faults would occur for the LRU,FIFO,LFU and optimal page replacement algorithms assuming two and five frames?	[16M]
6	a)	How can a system recover from a deadlock? Explain	[8M]
	b)	Explain the Resource-Allocation Graph Algorithm for deadlock prevention.	[8M]
7	a)	Explain the different file access methods in detail.	[8M]
	b)	Describe any two disk scheduling algorithms with suitable illustrations.	[8M]

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