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

III B. Tech I Semester Supplementary Examinations, May- 2019

OPERATING SYSTEMS

(Common to Computer Science and Engineering, 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)	"Embedded systems always run on real-time operating system"-Justify this statement.	[4M]
	b)	Explain multilevel queue scheduling.	[4M]
	c)	Differentiate Semaphore and Counting Semaphore.	[3M]
	d)	Write about Dynamic Loading and Linking.	[4M]
	e)	Discuss Resource allocation graph with respect to deadlock	[3M]
	f)	Write short notes on File Attributes.	[4M]

PART -B

2	a)	"Operating system is resource manager"-Justify this statement with suitable functionality of OS.	[8M]
	b)	Explain Microkernel and multithreading operating system designs with advantages and disadvantages.	[8M]
3	a)	Does preemptive scheduling give same performance as non-preemptive scheduling algorithm? Compare their performance by assuming at least 5 processes arrived at different time intervals.	[8M]
	b)	Discuss the transitional changes in process states diagram when blocked suspended and ready suspended states are included.	[8M]
4	a)	What is semaphore? Explain its implementation as wait and signal for providing process synchronization?	[8M]
	b)	Write and explain the solution for Reader-Writer classical synchronization problem using monitors.	[8M]
5	a)	Explain various types of memory Allocation techniques with advantages and disadvantages with example	[8M]
	b)	Consider the following page reference string 1, 2,3,4,5,2,6,7,3,2,4,1,7,1,4,3,2,3,4,7,1. Compare the number of page faults with frame sizes 3,4 and 5 with any replacement algorithm.	[8M]
6	a)	How characterize the structure of deadlock? Explain the two solutions of recovery from deadlock.	[8M]
	b)	Consider deadlock situation in dining philosopher's problem. Discuss how necessary conditions indeed hold in sitting and also how they are avoided?	[8M]
7	a)	Describe in detail about variety of techniques used to improve the efficiency and performance of secondary storage.	[6M]
	b)	Write a short note on the following i) Stable storage implementation ii) Free space management	[10M]

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