

T.E. (Computer) (Semester – V) Examination, Nov./Dec. 2009 (Revised Course) OPERATING SYSTEMS

Duration: 3 Hours

Max. Marks: 100

Instructions: i) Answer five fi

 Answer five full questions by selecting at least one from each Module.

- ii) Make appropriate assumptions wherever necessary.
- iii) Write answers in the same sequence of questions.

Module – 1

- 1. a) Define the essential properties of the following with respect to operating systems
 - i) Batch ii) Interactive

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- b) Under what circumstances would a user be better of using a time sharing system rather than a PC or a single user workstation.
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c) What are threads? Explain the various thread models.

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- d) Consider a set of 2 periodic tasks with the execution profile given below.

Process	Arrival Time	ExecutionTime	Ending deadline
A(1)	0	10	Span il 20 sussev
A(2)	20	10	40
A(3)	40	10	niau m 60
A(4)	60	10	80
A(5)	80	10	100
B(1)	0	25	50
B(2)	50	25	100



T.E. (Computer) (Semester ... V) Examination, Nov. (Dec. 2009) Develop a scheduling diagram using

- 1) Fixed priority scheduling, where A has higher priority
- 2) Fixed priority scheduling, where B has higher priority
- 3) Earliest deadline scheduling using completion deadline
- 2. a) Consider a system that executes the following processes using Round Robin algorithm with a time slice of 4 ms

Process Processing Arrival Time Time nessys : A tractic die essential gropert lessel the following with Despeople officers in system Svillement (ii $^{C}_{\mathrm{Table}}$ unique gris 3 decients (see Fee 2 a blook appointment and solve which 1 rather than a PC or a single beer workstand of What are threads? Explain the variation the

d) Consider a set of 2 periodic tasks with the execution profile given below. 1) Draw a chart to illustrate the execution schedule.

3) What is the average wait time?

b) Explain the producer consumer problem and give a solution to infinite buffer producer consumer problem using Binary semaphore.

c) Explain the following terms with respect to operating systems:

1) Convoy effect

Graceful degradation

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system?

Companie (Commo Module - 2 prodos) soulaborios

- 3. a) Give any three mechanisms to recover from a deadlock
 - b) What is segmentation? How is sharing of segments done in a segmented memory
 - c) Explain how a page fault is handled.

4. a) Explain Fetch, Placement and Replacement policy.

b) Discuss Resident set management. In the property by the weeken of the sunique to

c) Consider the following snapshot of the system.

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Using bankers algorithm

	Allocation		Max			Availab			ble	
	Α	В	С	A	В	С		A	В	С
P0	0	1	0	7	5	3	144	3	3	2
P1	2	0	0	3	2	2				
P2	3	0	2	9	0	2				
P3	2	1	1	2	2	2				
P4	0	0	2	4	3	3				

- 1) What is the content of the matrix need?
- 2) Is the system in a safe state?

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5. a) Explain in brief different directory structure. The lay 2 septemble structure 8

b) What is polling? Explain.

c) Explain I/O Scheduling with respect to LINUX.

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6.	a)	List two disk scheduling techniques and differentiate.	k								
	b)	How is swap space used? Where is it located on the disk?	200								
	c)	Write a short note on windows I/O manager.	ě								
	d)	Explain the process of Disk formatting.									
		by Francis deadline schedule: Module - 4 basel at that agong a work nicigarit to									
7.	a)	Explain the nature of viruses and explain different types of viruses.)								
	b)	Explain UNIX password protection technique.	5								
	c)	Given a string "Operating system" (9 5	3								
		i) Find the length of the string Time Management and Inc.									
		ii) Display the last two characters of the string									
		iii) Find the position of the character "e" in the given string.									
8	a)	사람들의 내용 사용 문제 보고 있는 것들은 경기 가장 생각을 받았다면 하는데 그리고 있는데 그를 모르는데 그를 받는다.	5								
0.	aj	1 September 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1									
		2 2									
		1) Draw a chart to Mun 3 and the 3 converse trades to 1 1 1 5 24									
		2) What is the sent 5 to 5 5 5 5 5 5									
		Ty What is the 6 of 6 o									
		The claim the constraint of the state of the									
		Using shift statement and command line arguments write a shell script to search 6 different patterns in a file. If pattern is found then display the corresponding line if not display a message as pattern not found.									
	(c)	What is a digital Immune System?	5								

c) ideplication I/O Substations with respect to LIMITA