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RN-8195

B. E. II (Sem. IV) (Comp.) Examination

May / June – 2010

Operating Systems

Time : **3** Hours] [Total Marks : **100**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. 2 (Sem. 4) (Comp.)**

Name of the Subject :

☛ **Operating Systems**

☛Subject Code No. : **8 1 9 5** ☛Section No. (1, 2,.....) : **1&2**

Seat No. :

Student's Signature

(2) Use Separate answer sheet for each section.

(3) Make assumption whenever required.

(4) Numbers on the right indicate marks.

SECTION I

Q:1	A		10
		i) Define the following 1) Critical Section 2) Starvation 3) Deadlock 4) Cryptography 5) Virus	5
		ii) What is the difference between the idle and blocked state of a process?	2
		iii) Given 5 total units of the resource, tell whether the following system is in a safe or unsafe state. Process Used Max P1 1 2 P2 1 3 P3 2 4 P4 0 5	3

	B	Define the terms : a) Turn around time b) Waiting time For the processes listed in table , what is the turn around time & average waiting time of each process for **any two** Process scheduling algorithm given below 1) Shortest remaining time 2) Round Robin(Quantum = 2) 3) First Come First Serve	**10**

Process	Arrival Time	Processing Time
A	0	4
B	2	7
C	3	2
D	3	2

Q:2		Answer Any Two of the following	**14**
	1	Define Deadlock. Explain the four necessary conditions for deadlock occurrence.	
	2	Explain Dining Philosophers problem.	
	3	Explain the different states of Process with proper state diagram	
Q3	**A**	Answer any Four of the following	**16**
	1	Write a solution to the Producer Consumer problem using semaphores	
	2	Explain race around condition with an example	
	3	What is an operating system? What is the role of OS?	
	4	Write a short note on Monitors	
	5	Explain FCFS Disk Scheduling Algorithm with example	
	6	Explain Access Control List	

SECTION - II

4. (A)	1. Write a command to change the mode. 2. Define fork(). 3. Full form of TLB. 4. Relative path names begin by identifying path from the root. c. True d. False 5. List out the file attributes. 6. UNIX is multiuser system. a. True b. False 7. Segmentation is faster than paging. a. True b. False 8. Paging solves the problem of internal fragmentation. a. True b. False 9. Define lazy swapper. 10. Define FCB.	10

4. (B)	Consider the following page reference string 1 0 7 1 0 2 1 2 3 0 3 2 4 0 2 0 2 1 0 7 How many page faults would occur for LRU and FIFO.(Assume 3 page frames).	8
5.	Attempt the following (any four)	16
	1. Write a short note on demand paging.	
	2. Explain segmentation in memory management.	
	3. Explain the continuous, linked and index allocation methods.	
	4. Explain in detail file attributes.	
	5. Write a note on virtual memory.	
	6. Write a short note on directory structure.	
6.	Attempt the following (any four)	16
	1. Discuss the Linux file system.	
	2. Explain internal and external fragmentation.	
	3. What is the computation migration and process migration.	
	4. Explain briefly the distributed operating system.	
	5. Write a shell program to test whether a given number is even or odd?	
	6. Explain Security in Linux.	