7E4051

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B. Tech. VII Semester (Main/Back) Examination, Nov-Dec - 2011
Electronics and Communication Engineering
7EC6.3 Operating System

Time : 3 Hours

Maximum Marks : 80
Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five questions** selecting **one question** from **each unit**. All questions carry **equal marks**. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Unit - I

1. a) Explain Time shared system and Real time system.
    b) Explain Multiprocessor systems and its advantages.

OR

1. Explain Operating system and its services in detail.

Unit - II

2. a) Differentiate between Job Scheduler and CPV scheduler.
    b) Explain state transition diagram of process and also explain Process Control Block (PCB).

OR

2. a) Find the average waiting time for following processor by preemptive shortest Job first scheduling algorithm.

Process	Arrival Time	CPV Burst time
P_1	0.0	8
P_2	0.4	4
P_3	1.0	1

    b) Explain Race condition.

Unit - III

3. a) How many page faults would occur for the following replacement algorithm.
    i)   FIFO
    ii) Optimal replacement for the string
         1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6
         Three frames are allocated in main memory only.

b) Explain Belady's Anomaly.

OR

3. a) Explain continuous memory allocation and internal and external fragmentation.
   b) Suppose that a disk drive has 5000 cylinder, numbered 0 to 4999. The drive is currently serving a request at cylinder 143 and the previous request was at cylinder 125.
   Compute the head movement for
   i) SSTF and
   ii) Look scheduling algorithms for the following request que.
   86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130

Unit - IV

4. a) Explain firewall in detail.
   b) Explain file access methods.

OR

4. a) Explain Trojan horses and Trap door
   b) Explain Authentication using passwords.

Unit - V

5. a) Explain Readers and writers problem. How it can be solved?
   b) Explain deadlock detection and Recovery methods.

OR

5. Consider the following Scenario of a system.

	Allocation			Max			Available		
	A	B	C	A	B	C	A	B	C
P_0	0	1	0	7	5	3	3	3	2
P_1	2	0	0	3	2	2			
P_2	3	0	2	9	0	2			
P_3	2	1	1	2	2	2			
P_4	0	0	2	4	3	3			

Answer the following questions using Banker's Algorithm?
a) What is content of matrix used. Is system in sate state.
b) If a request from process P_1 arrives for (1, 0, 2), can the request be granted immediately.

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