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Total No. of Questions :6]

SEAT No. :

P109

APR. -16/TE/Insem. - 46

[Total No. of Pages :2

T.E. (Information Technology)

OPERATING SYSTEM

(2012 Pattern) (Semester - II)

Time : 1Hour]

[Max. Marks :30

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6.
- 2) Neat diagrams must be drawn whenever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

- Q1) a) Describe flow control during system call with the help of neat diagram. [6]  
b) Differentiate between monolithic and microkernel. [4]

OR

- Q2) a) Explain Modern and Traditional Unix Kernel with diagram. [6]  
b) List and briefly explain five storage management responsibilities of typical OS. [4]

- Q3) a) Consider following set of processes

Process	Arrival Time	Burst Time
P1	0	8
P2	1	1
P3	2	3
P4	3	2
P5	4	6

Apply FCFS, SJF (Preemptive). Calculate average waiting time and average turn around time. [8]

- b) Describe exec family of system call. [2]

OR

P.T.O.

Q4) a) Consider following set of processes. [8]

Process	Arrival Time	Burst Time
P1	0	3
P2	1	5
P3	3	2
P4	9	5
P5	12	5

Apply SJF (Preemptive) & RR (TQ = 1). Calculate average waiting time and average turn around time.

b) Explain the concept of process control block. [2]

Q5) a) Write and explain deadlock free solution for dining philosophers problem. [5]

b) Enlist different ways to handle Mutual Exclusion. Give example of each. [5]

OR

Q6) a) Consider following snapshot of system. [5]

Process	Allocation			Max			Available		
	R1	R2	R3	R1	R2	R3	R1	R2	R3
P1	0	1	0	7	5	3	3	3	2
P2	2	0	0	3	2	2			
P3	3	0	2	9	0	2			
P4	2	1	1	2	2	2			
P5	0	0	2	4	3	3			

Answer the following questions using bankers algorithm.

i) What is the content of matrix need?

ii) Is the system in safe state? What is safe sequence?

b) Enlist different IPC mechanism. Differentiate between named pipe and unnamed pipe. [5]

