

Gen. 5699-09.

T.E. (Comp) Sem VI  
Operating Systems with Unix

(3 Hours)

SP-8054

[Total Marks : 100

11/01/2010

2:30 to 5:30 pm

(Lib)

- N.B. : (1) Question No. 1 is **compulsory**.  
 (2) Assume **suitable** data whenever **necessary**.  
 (3) Attempt any **four** questions from remaining.

1. (a) Draw the block diagram of the system Kernel of Unix Operating system and explain its working. 10  
 (b) What is mutual exclusion ? Explain Dekker's algorithm for mutual exclusion. 10
2. (a) For the following calculate average turn around time and average waiting time for following algorithms : 10
  - (i) FCFS
  - (ii) Preemptive SJF
  - (iii) Round Robin (1 time unit).

Process	Arrival	Burst Time
P <sub>1</sub>	0	8
P <sub>2</sub>	1	4
P <sub>3</sub>	2	9
P <sub>4</sub>	3	5

- (b) Draw and explain the state transition diagram for the process. 10
3. (a) What is deadlock ? Explain various deadlock prevention techniques. 10  
 (b) What is system call ? What are different system calls ? Explain. 10
4. (a) List and explain in brief various memory management techniques. 10  
 (b) Explain following page replacement algorithms : 10
  - (i) FIFO
  - (ii) LRU
5. (a) Explain various disk scheduling algorithms. Explain the criteria for selecting the best disk scheduling algorithm. 10  
 (b) Explain various file allocation methods. 10
6. (a) Explain file management in window-2000. 10  
 (b) Explain various I/O buffering techniques. 10
7. Write short notes on the following :- 20
  - (a) File organization and access
  - (b) Process Vs thread
  - (c) Semaphore
  - (d) Monitors.