

Con/5479-07.

(REVISED COURSE)
(3 Hours)

CD-5568
[Total Marks : 100

- N.B. : (1) Attempt any **four** questions.
(2) **Figures** to the **right** indicate **full** marks.
(3) Assume **suitable** data if **required**.

1. a) Draw and explain the block diagram of the system kernel of Unix Operating system. [10]
b) What is buffer cache? Write advantages and disadvantages of buffer cache in UNIX OS. [10]
2. a) Explain the following with reference to UNIX:-
1) i-node 2) fork() 3) system call() 4) interrupt 5) wait() [10]
b) Explain the following criteria for comparing CPU- scheduling algorithm:-
1) Throughput 2) CPU utilization. 3) Turn around time
4) Waiting time 5) Response time [10]
3. a) Differentiate the following:- [10]
1) Process vs. thread. 2) IO channel vs. CPU
b) Draw and explain paging hardware with TLB. [10]
4. a) Explain FCB and PCB in operating system. [10]
b) What is disc scheduling? What are various disk scheduling algorithms?
Explain the criteria for selecting the best disc scheduling algorithm. [10]
5. a) Write short notes on the following:-
1) Virtual memory 2) Demand paging. [10]
b) Explain the benefits of multithreading programming. [10]
6. a) Explain the following w.r.t. process concurrency and synchronization:- [12]
1) Mutual exclusion 2) Starvation
3) Critical region 4) Binary semaphore.
b) Draw and explain the state transition diagram for the process. [08]
7. Write short notes on the following:- [20]
1) Case study of Unix operating system.
2) Operating system as a resource manager.
3) Monitors.