S.E. Com Sem IV Dec - 2012 (Rev).

48-p3-d-upq-SH KL12 B

~~De~~ Sub - O.S.

Con. 7880–12.

KR–7589

(3 Hours) [Total Marks : 100

N.B. : (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** questions from remaining **six** questions.

1. (a) What is an Operating System ? Explain Objective and Functions of Operating System. 10
(b) Differentiate between Monolithic and Microkernel. 5
(c) Explain effect of page size on performance. 5

2. (a) Explain Process Control Block (PCB) and its role. 10
(b) Explain difference between Process and Thread. Draw and explain five state process model. 10

3. (a) What is deadlock ? Explain necessary and sufficient conditions to occur deadlock. Also explain Banker's algorithm for deadlock avoidance. 10
(b) Explain architecture of Window 2000. 10

4. (a) Explain paging in detail. Describe how logical address is converted to physical address. 10
(b) Consider the following set of processes with CPU burst time given in table. 10

Process	Burst Time	Arrival Time
P_1	10	01
P_2	04	02
P_3	05	03
P_4	03	04

(i) Draw Gantt chart for FCFS, SJF, and Round Robin (Quantum = 03).
(ii) Calculate average waiting time and average turn around time.

5. (a) Explain File allocation methods in detail. 10
(b) Calculate hit and miss using LRU, FIFO and OPTIMAL Page replacement methods for following page frame sequences; Page frame size is 3 :— 10
4, 7, 3, 0, 1, 7, 3, 8, 5, 4, 5, 3, 4, 7

6. (a) Explain RAID with different levels. 10
(b) Explain different disk scheduling algorithms. 10

7. Write short notes on :— 20
(a) User level and Kernel level Threads
(b) Real time Operating System
(c) Semaphore
(d) Monitors.
