

Seat No. : \_\_\_\_\_

**NE-132**

**December-2015**

**S.Y. M.Sc. (CA & IT)**

**Concept of Operating System**

**Time : 3 Hours]**

**[Max. Marks : 100**

1. (A) Explain the following term (any **five**) : **10**

- (1) Process Control Block
- (2) Ready Suspend Process
- (3) Race Condition
- (4) Interrupt
- (5) Starvation
- (6) SMP

(B) Answer the following questions (any **two**) : **10**

- (1) What is Process ? Discussed Seven State Process Model in detail.
- (2) What is Thread ? Write difference between ULT & KLT.
- (3) What is Deadlock ? Explain condition for Deadlock.

2. (A) Answer the following questions (any **two**) : **10**

- (1) What is PAGING ? Explain in detail.
- (2) What is Virtual Segmentation ? Explain with example.
- (3) Explain Long Term, Middle Term, Short Term Scheduler in detail.

(B) Consider following set of process. Find Turnaround Time (TAT) using FCFS, RR(Q=4), SRT, SPN scheduling algorithm. **10**

Process Name	Arrival Time	Processing Time
A	0	8
B	1	4
C	2	9
D	3	5

3. (A) Answer the following questions (any **two**) : **10**
- (1) What is Buffering ? Explain different type of Buffering technique.
  - (2) What is RAID ? Explain in detail.
  - (3) What is File Allocation Table (FAT) ? Discussed different type of File Allocation Method.
- (B) We assume Disk with 200 track and that the disk request queue has random request in it. The requested tracks, in the order received by disk scheduler are **10**
- 50, 65, 45, 18, 95, 160, 145, 50, 195
- Head set on track 100.
- Find average seek length using FIFO, SSTF, SCAN, C-SCAN Disk scheduling algorithm.
4. (A) Answer the following questions (any **two**) : **10**
- (1) Explain Programmed I/O, Interrupt driven I/O, Direct Memory Access (DMA) in detail.
  - (2) Explain Different File Access Method.
  - (3) What is Page Fault ? Explain in detail.
- (B) Consider the following sequence of page references (page string) **10**
- 1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3
- Use page replacement algorithm FIFO, OPTIMUM, LRU. Find out number of page fault. The working set is Four. (four free frame)
5. Answer the following questions (any **four**) : **20**
- (1) What is Monitor ? Explain solution of Bounded Buffer producer – consumer problem using Monitor.
  - (2) What is Virtual Memory ? Explain Virtual Paging in detail.
  - (3) What is Semaphore ? Explain solution of Dining Philosophers Problem using Semaphore.
  - (4) What is Micro Kernel ? Discuss advantage of Micro Kernel.
  - (5) What is Record Blocking ? Explain different method of it.