* K A - 3 7 6 4 *

KA-3764

Third Year B. C. A. (Sem. V) Examination

September / October – 2012

504 : Operating System - II

Time : **3** Hours] [Total Marks : **70**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ T. Y. B. C. A. (SEM. 5)

Name of the Subject :

☛ 504 : OPERATING SYSTEM - 2

☛ Subject Code No. : 3 7 6 4 ☛ Section No. (1, 2,.....) : NIL

Seat No. :

Student's Signature

(2) Draw figure wherever necessary.

(3) Figures in **right** indicate marks.

1 Answer in short : **7×2=14**

(i) What is Starvation ?

(ii) Define turnaround and throughput time.

(iii) What is Dispatcher ? Which function it involves ?

(iv) What information needs to be saved when context switching takes place ?

(v) What do you mean by race condition ?

(vi) What is Thrashing ?

(vii) Define seek and latency time.

2 Do as directed : **7+7=14**

(i) What is semaphore ? Explain how does it solve the critical section problem ?

OR

(i) What is safe state ? Explain Banker's algorithm to avoid deadlock.

(ii) If the page fault occurs, explain how the OS service that page fault.

OR

(ii) Explain Inverted page table.

3 Write short note : (any **two**) **7+7=14**

(i) Disk space management

(ii) Indexed allocation

(iii) Segmentation with Demand paging.

4 Do as directed : **7+7=14**

(i) Consider the following set of processes with the length of the CPU-burst time given in milliseconds and priority of the process (consider 1 as highest priority) :

Process	Arrival Time	Burst Time	Priority
P1	0	10	3
P2	1	17	1
P3	3	3	3
P4	4	7	4
P5	6	12	2

Solve the following questions :

Draw the four Gantt chart illustrating the execution of these processes, using SJF, Preemptive Priority and Round Robin (Quantum=5).

What is the Waiting time of each process and Average ?

Waiting time for SJF, Preemptive Priority and Round Robin Algorithm.

(ii) Suppose that disk drive currently serving at cylinder 112 and previous request was at 156.
The queue in pending order is :
18, 159, 51, 189, 92, 66, 12, 101

Starting from the current head position, what is the total distance that the disk arm moves to satisfy all the pending requests for each of the following disk-scheduling algorithms (Assuming No. of total cylinder 0 to 199)

- SCAN
- SSTF
- C-LOOK.

5 Do as directed : (any **two**) **7+7=14**

(i) Write a note on multilevel queue scheduling

(ii) Explain tree level directory structure

(iii) Write a note on message passing system.
