



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)

नीचे दशांशिक निशान्तीवाणी विगतो उत्तरवही पर अवश्य लखवी.
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.

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[Contd...

- 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.