



EO-3770

Third Year B. C. A. (Sem. V) Examination
October / November - 2016
Operating System - II
(New Course)

Time : 3 Hours]

[Total Marks : 70

Instruction :

नीचे दशावलि निशानीवाणी विगतो उत्तरवडी पर अवश्य दपनी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
THIRD YEAR B. C. A. (SEM. V)	<input type="text"/>
Name of the Subject :	<input type="text"/>
OPERATING SYSTEM - 2 (NEW)	<input type="text"/>
Subject Code No. : 3 7 7 0	Section No. (1, 2,.....) : Nil
	Student's Signature

1 Answer in short : (any seven) 14

- (1) Differentiate between logical address space and physical address space.
- (2) What are independent processes ?
- (3) What is Compaction ? Why it is required ?
- (4) What is Dispatcher ?
- (5) What purpose does the modified bit serve in demand paging system ?
- (6) What is the difference between Preemptive and Non-preemptive scheduling ?
- (7) What is Starvation ? How starvation can be handling ?
- (8) What is Swapping ?

2 Do as directed : 14

(a) Consider the following reference string : 7

1, 2, 3, 4, 1, 6, 5, 2, 1, 3, 7, 4, 2, 1, 3, 5, 7, 2, 1

How many page faults will occur for the following replacement policies ?

Consider the memory is empty initially and memory is having 3 frames.

- (a) OPT page replacement algorithm
- (b) FIFO page replacement algorithm.

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[Contd...

- (b) Define Virtual memory. Explain demand paging with its advantages and disadvantages. 7

OR

- (b) Explain multilevel feedback queue scheduling algorithm for process scheduling. How it differs from the multilevel queue scheduling ? 7

3 Write short notes : (any **three**) **18**

- (1) Inverted page table
- (2) Peterson solution
- (3) Interprocess communication
- (4) Segmentation.

4 Do as directed : **14**

- (a) Consider the following set of process, with the length CPU-burst time given in milliseconds :

Process	Burst time	Priority
P1	4	1
P2	7	4
P3	9	2
P4	2	1
P5	4	3

The processes are assumed to have arrived in following order :

P1, P2, P3, P4, P5 all at time zero

- (i) Draw Gantt chart to illustrate execution of process using following algorithm :
 - FCFS scheduling
 - RR scheduling (Quantum = 1)
 - Priority based scheduling
- (ii) Calculate turnaround time and waiting time of each process in each scheduling algorithm.

- (b) What is semaphore ? Explain producer-consumer problem using semaphores. 7

OR

- (b) Define page fault. Write steps to handle page faults.

5 Answer the following : (any two) **10**

- (1) Explain TLB in detail.
- (2) Define process. What is process state diagram ? List the content of PCB.
- (3) What is deadlock ? What are necessary conditions for deadlock to occur ?

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