



ML-3770

**Third Year B. C. A. (Sem. V) (CBCS) Examination**  
**October / November – 2015**  
**Operating System - II**

Time : 3 Hours]

[Total Marks : 70

**Instruction :**

नीचे दशांशिक निशानीवाणी विगतो उत्तरवही पर अवश्य द्धपवी.  
Fillup strictly the details of signs on your answer book.

Name of the Examination :  
**THIRD YEAR B. C. A. (SEM. 5) (CBCS)**

Name of the Subject :  
**OPERATING SYSTEM - 2**

Subject Code No. : **3 7 7 0** Section No. (1, 2,.....) : **NIL**

Seat No. : 

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Student's Signature

**1 Answer in Short : (any seven) 14**

- (1) What is a role of file system? Write the name of some OS file system.
- (2) Define CPU Scheduling. What is preemptive and non-preemptive scheduling?
- (3) What is Thrashing?
- (4) What is Critical section? How mutual exclusion can be achieved?
- (5) Explain pure demand paging.
- (6) What is compaction? How it can be performed?
- (7) What is Belady's anomaly?
- (8) What is a solution of dynamic storage allocation problem?

**2 Do as Directed : (any three) 18**

- (1) Explain memory allocation scheme with fragmentation in detail.
- (2) Define deadlock. Explain deadlock prevention mechanism in detail.
- (3) Explain memory segmentation scheme.
- (4) Explain disk space allocation schemes of file.

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[Contd...

**3 Do as Directed : (any one) 10**

(1) Consider the reference string given below :  
2, 3, 2, 1, 5, 2, 4, 5, 3, 2, 5, 2  
How many page faults will occur for the following replacement? Consider the memory is empty initially and having 3 frames. Which one is better and why?

- (i) Optimal page replacement algorithm
- (ii) LRU page replacement algorithm
- (iii) FIFO page replacement algorithm

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

Process	Burst time	Arrival time
P1	3	0
P2	6	2
P3	4	4
P4	5	6
P5	2	8

The processes are assumed to have arrived in following order : P1, P2, P3, P4, P5.

- (i) Draw Gantt charts to illustrate the execution of the process using :
  - FCFS scheduling
  - SRTF scheduling
  - Round Robin scheduling (Quantum = 4)
- (ii) Calculate turn around time and waiting time of each process in each scheduling algorithm.

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

- (a) Second Chance algorithm.
- (b) TLB
- (c) Acyclic Graph Directory
- (d) Deadlock Avoidance

**5 Answer the following : 10**

(a) Explain producer consumer problem with a fatal race condition. 5

OR

(a) Explain the concept of Demand Paging in detail. 5

(b) Write about File protection in detail. 5

OR

(b) Explain Multilevel feedback scheduling. 5