

A-3770

Third Year B. C. A. (Sem. V) (CBCS) Examination
March / April - 2015
Operating System - II

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

नीचे दशांशों के निशानों के विवरणों के उत्तरपत्र पर अवश्य लिखनी। 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. 5) (CBCS)	<input type="text"/>
Name of the Subject :	<input type="text"/>
Operating System - 2	<input type="text"/>
Subject Code No. : <input type="text" value="3"/> <input type="text" value="7"/> <input type="text" value="7"/> <input type="text" value="0"/>	Section No. (1, 2,.....) : <input type="text" value="Nil"/>
Student's Signature	

(2) Figures on right indicates marks.

(3) Do not interchange option.

1 Answer in short : 14

- (1) What are the PM functions ?
- (2) What is compaction ? Why it is required ?
- (3) Define mutual exclusion.
- (4) What information needs to be saved when context switching takes place ?
- (5) What are the major functions of File Management ?
- (6) Define principle of Locality.
- (7) What do you mean by cooperating processes ?

2 Do as Directed. 18

- (a) What is producer-consumer problem ? Explain with example. 6
- (b) What is the problem with the NFU page replacement ? What should be the modification to overcome this problem ? Explain it. 6
- (c) What is safe state ? Explain Banker's algorithm to avoid deadlock. 6

OR

- (c) Write a note on message passing system. 6

A-3770]

1

[Contd...

- (a) Demand paging.
- (b) Bitmaps and Linked-list approach for allocation
- (c) Paterson's algorithm for critical region problem
- (d) Second chance algorithm.

4 Do as directed :

10

Consider the following page-reference string :

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

How many page faults would occur for the following replacement algorithms, assuming four frames ?

- LRU replacement.
- Optimal replacement.

Give the comparison between these two.

OR

4 Consider the following page-reference string :

a, b, a, c, a, b, d, b, a, c, d.

How many page faults would occur for the following replacement algorithms, assuming three frames ?

- LRU replacement.
- FIFO replacement.

Which is better ? Why it is better ? Explain.

5 Do as directed :

10

(a) Explain any two methods for file access control verification.

5

OR

(a) Explain the hierarchy model of the file system.

5

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

5

OR

(b) Why we required structured page table ? Explain Hierarchical Page Table in detail.

5