



BB-1904

Third Year B. C. A. (Sem. V) Examination
October / November – 2009
Operating System - II
(New Course)

Time : 3 Hours]

[Total Marks : 70

Instructions :

(1)

नीचे दशावलि निशानीवाणी विगतो उत्तरवही पर अवश्य लपवी.
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 :
Operating System - 2 (New)

Subject Code No. : 1 9 0 4 Section No. (1, 2,.....): Nil

Seat No. : [] [] [] [] [] [] [] [] [] []

Student's Signature

- (2) Figures to the right indicate full marks of the question.
(3) Mention your options clearly.
(4) Draw the diagram wherever necessary.
(5) Question 1 is compulsory.

1 Answer the following questions in brief : (any seven) 14

- (1) What is the use of inverted page map table ?
(2) What are the contents of SMT ?
(3) What is compaction process ?
(4) What are the contents of PCB ?
(5) What do you mean by process synchronization ?
(6) What is page fault ? Which technique is used to reduce page faults ?
(7) What are the functions of file manager ?
(8) What is MFD, UFD ?
(9) What is sector sparing and sector slipping ?
(10) What do you mean by synchronous and asynchronous device ?

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[Contd...

- (b) Describe Banker's algorithm in detail with its advantages. 8
- OR
- (b) Explain Peterson's solution for achieving the Mutual exclusion. Also write necessary code for implementing it. 8
- 3 Do as directed : 14
- (a) Consider following page reference string :
1,2,3,4,1,6,5,6,2,1,3,7,4,2,1,3,5,7,2,1
How many page faults occur for the following replacement? Consider the memory having 4 frames is empty initially.
- (i) LRU page replacement
(ii) FIFO page replacement
(iii) Optimal page replacement.
- (b) Discuss paging with segmentation in multics system in detail. 8
- OR
- (b) List structures of page table. Discuss inverted page table. 8
- 4 Attempt the following : 14
- (a) What is significance of device controller ? 7
- OR
- (a) Explain following directory structure : 7
- (i) Two level
(ii) Tree level
(iii) Acyclic Graph.
- (b) Explain the linked allocation of disk space to files. 7
- OR
- (b) Write a note on spooling.
- 5 Answer the following : 14
- (a) What is deadlock ? What are the necessary conditions for the deadlock ? 7
- OR
- (a) Explain critical section problem. 7
- (b) Differentiate between fixed and dynamic partition schemes of memory allocation. Explain any one in detail. 7
- OR
- (b) Discuss producer/consumer problem using semaphores. Also write necessary code for implementing the solution. 7