

N (Printed Pages 4)
(20517) Roll No.
BCA - IV Sem.

18017

BCA Examination, May 2017

Operating System

(BCA-402)

(New)

Time : Three Hours] [Maximum Marks : 75

Note : Attempt all the sections as per instructions.

Section-A

(Very Short Answer Questions)

Note : Attempt all five questions. Each question carries 3 marks. $3 \times 5 = 15$

1. Define the following terms : 3
 - (a) Batch processing
 - (b) Time sharing
 - (c) Real Time

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2. What are the classical problems of Synchronisation? 3
3. List three examples of deadlocks that are not related to a Computer system environment. 3
4. What do you understand by virtual devices? and what are the advantages of virtual devices? 3
5. Give the various allocation methods of file system. 3

Section-B

Note : Attempt any two questions. Each question is of 7.5 marks. $7.5 \times 2 = 15$

6. Define the contiguous linked allocation and non-contiguous allocation with suitable examples. 7.5
7. Describe the Paging and Segmentation techniques of memory management in detail. 7.5

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8. What are Process Control Blocks (PCBs)?
Why these are used by Operating system?
Also explain the structure of PCB. 7.5

Section-C

Note : Attempt any **three** questions. Each question is of 15 marks. Answer is required in detail. 15×3=45

9. Consider the following page reference string
1, 2, 3, 4, 1, 2, 5, 1, 2, 3, 4, 5
How many page fault would occur for the following replacement algorithms, assuming four frames : 15
- (a) LRU replacement
 - (b) FIFO replacement
 - (c) Optimal replacement
10. (a) Discuss various scheduling algorithm with examples. 10
- (b) Explain the difference between thread and process. 05

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P.T.O.

11. Define deadlock. What are the four necessary conditions for deadlock. Discuss different strategies for denying various necessary conditions. 15

12. (a) Explain the structure of a disk with the help of a diagram. 7.5

- (b) Explain - the concept of swap-space management. 7.5

13. Write short notes on any **three** of the following : 5×3=15

- (a) Directory Structure
- (b) Multi threading Concept
- (c) File Protection and Security
- (d) Free Space Management
- (e) Thrashing

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