BCA-07/DCA-102

June - Examination 2018

BCA Pt. II/DCA Examination

Operating System - I

Paper - BCA-07/DCA-102

Time : 3 Hours]   **[Max. Marks :- 100**

Note: The question paper is divided into three sections A, B and C. Write answers as per the given instructions.

Section - A $10 \times 2 = 20$
(Very Short Answer Type Questions)

Note: Answer **all** questions. As per the nature of the question delimit your answer in one word, one sentence or maximum up to 30 words. Each question carries 2 marks.

1) (i) What is Batch Processing System?

    (ii) Give three examples of GUI based Operating System.

    (iii) What is the cause of Fragmentation?

    (iv) What is Symmetrical Encryption?

    (v) What is Trojan horse?

    (vi) A process execute a following code
        for (i=0;i<n;i++) fork( );
        then how many child processes are created?

(vii) List the necessary conditions of Deadlock.

(viii) Differentiate between pre-emptive and non-pre-emptive scheduling.

(ix) Suppose the process is waiting to be assigned a processor then the process is in which state?

(x) Name the algorithm for deadlock avoidance.

Section - B $4 \times 10 = 40$
(Short Answer Questions)

Note: Answer **any four** questions. Each answer should not exceed 200 words. Each question carries 10 marks.

2) What are the benefits of Threads? Explain the difference between kernel level and user level threads.

3) Discuss various functions/services of Operating System in detail.

4) What is Distributed Operating System? Discuss its key properties.

5) What is a Monitor? Differentiate between Monitor and Semaphore.

6) Why Belady's Anomaly occurs? Explain with example.

7) Discuss the strengths and weaknesses of implementing an access matrix using access list that are associated with objects.

8) How authentication is achieved in a system? Describe various methods of authentication.

9) Write short note on file access control.

Section - C $\qquad$ $2 \times 20 = 40$

(Long Answer Questions)

Note: Answer **any two** questions. You have to delimit your each answer maximum up to 500 words. Each question carries 20 marks.

10) What are the different algorithmic solutions of critical section problem? Explain.

11) Compose FCFS, SJF and Round Robin scheduling algorithms by computing average waiting time. There are five processes with CPU burst time as 10, 5, 17, 25, 6 and arrival time are 0, 1, 0, 2, 7 units. Assume time quantum for Round Robin scheduling as 5 units.

12) Compute Page fault ratio. The pages referenced are 7, 5, 2, 1, 7, 5, 4, 5, 1, 2, 5, & 7 (12 pages). The job is allowed 3 blocks. Compare LRU and FIFO page replacement scheme.

13) Define Operating System. Describe the classification of Operating system.

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