LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **COMPUTER SCIENCE**

SIXTH SEMESTER – **APRIL 2019**

16UCS6MC04– OPERATING SYSTEM

Date: 10-04-2019 Dept. No. Max. : 100 Marks

Time: 09:00-12:00

SECTION A

ANSWER ALL THE QUESTIONS **(10 X 2 = 20)**

1. What is a distributed system?
2. Define scheduler. What are the two types of schedulers?
3. What are the criteria for comparing various CPU scheduling algorithms?
4. What is the meaning of the term 'Safe State'?
5. State the necessity of dynamic loading also writes its advantages.
6. List down the various methods of handling free holes in memory management.
7. What is the advantage of virtual memory?
8. List various file operations.
9. What are the three components of a Linux system?
10. What is a Bootstrap program?

SECTION B

ANSWER ALL THE QUESTIONS **(5 X 8 = 40)**

11. a. Define a process. What are the different states of a process? Explain about the operations on processes.

(OR)

b. Explain about system programs.

12. a. Briefly explain the algorithms for handling critical section.

(OR)

b. Write about deadlock prevention.

13. a. Write short notes on swapping.

(OR)

b. Explain about internal and external fragmentation.

14. a. Discuss on Tree structured directory.

(OR)

b. With a neat diagram explain the steps for handling demand paging.

15. a. A disk queue with requests for I/O to blocks on cylinders is given below. Disk head initiallyat 100. Calculate the total number of disk head movements using FCFS and SCAN scheduling algorithms. 23, 89, 132, 42, 187

(OR)

b. Explain about kernel I/O subsystem.

SECTION C

ANSWER ANY TWO QUESTIONS: **(2 X 20 = 40)**

16. a. Explain about inter process communication.

b. Write Bankers algorithm for handling deadlocks.

17. a. For the given set of processes , Find out the average waiting time using the following Algorithms . FIFO ii. Shortest Job First iii. Round Robin

(For Round Robin time quantum is 4)

Process	**CPU Burst time**
P1	20
P2	4
P3	6
P4	4

b. Explain about segmentationin memory management.

18. a. Explain various page replacement algorithms with examples.

b. Discuss the indexed file allocation .

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