LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. & B.C.A. DEGREE EXAMINATION – **COMPUTER SCIENCE. & APP.**

FIFTH SEMESTER – **NOVEMBER 2017**

CS 5510/CA 5510 – OPERATING SYSTEMS

Date: 03-11-2017   Dept. No.   Max. : 100 Marks
Time: 09:00-12:00

Part A

Answer ALL the Questions   **(10 * 2 = 20)**

1. Define Throughput and Turn Around Time.

2. What is Cooperating Process?

3. Differentiate CPU and IO bound Processes.

4. Differentiate Deadlock and Starvation.

5. Define Protection in memory management.

6. Differentiate Internal and External fragmentation.

7. What is Virtual Memory?

8. Define Seek Time and Latency Time.

9. What is Access Matrix?

10. State the uses of Buffering.

Part B

Answer ALL the Questions   **(5 * 8 = 40)**

11. a) Discuss about Command Interpreter and System Calls.

(or)

   b) Write short notes on Direct Communication in Message Passing.

12. a) Write short notes on Semaphores.

(or)

   b) Define Deadlock. Explain its characteristics.

13. a) Explain First fit, Best fit and Worst fit with its advantages and disadvantages.

(or)

   b) Discuss about Contiguous Allocation of memory.

14. a) Define Fetching. Discuss about its types, advantages and disadvantages.

(or)

   b) Give the types of files and explain ways of accessing the files.

15. a) Explain linked allocation of files with its advantages and disadvantages.

(or)

   b) Consider a disk queue with requests for I/O blocks on cylinders 98,183,37,122,14,124,65,67. With

   disk head initially at cylinder 53. Draw the Diagram to the schedule using FCFS, SSTF and SCAN.

Part C

16. (a) Define Process. With a neat diagram explain process states and PCB.

    (b) Find out the average waiting time using FCFS and SJF scheduling Algorithm using the following data.

Process	Arrival Time	Execute Time
P0	0	5
P1	1	3
P2	2	8
P3	3	6

17. (a) What is Resource Allocation Graph? With an example explain how it is used to avoid Deadlock.
    (b) What is Paging? How paging differs from segmentation?

18. (a) Calculate the Page Fault rate using Optimal and LRU Algorithm with allotted page size is 3 and page references as 7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,1,7,0,1.

    (b) How free spaces are managed on Disks? Explain.

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