



LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. & B.C.A DEGREE EXAMINATION – COMPUTER SCIENCE & COMPUTER SCI.

FIFTH SEMESTER – NOVEMBER 2014

CS 5510/CA 5510 - OPERATING SYSTEMS

Date : 01/11/2014

Dept. No.

Max. : 100 Marks

Time : 09:00-12:00

PART – A

ANSWER ALL THE QUESTIONS:

(10 x 2 = 20 marks)

1. Define system call.
2. What is the main advantage of multiprogramming?
3. What is dispatcher?
4. Define the use of monitor
5. Compare and contrast logical address space and physical address space.
6. Why are segmentation and paging sometimes combined into one scheme?
7. What is demand paging?
8. What are the attributes of files?
9. Define network-attached storage.
10. What is meant by write-through caches?

PART – B

ANSWER ALL THE QUESTIONS:

(5 x 8=40 marks)

- 11 a) Explain the types of system calls provided by an operating system.
(Or)
b) Describe in detail about the fork() and exec() Process Model .
- 12 a) Discuss about the various scheduling criteria involved in the CPU scheduling algorithm.
(Or)
b) Explain in detail about Resource-Allocation Graph.
- 13 a) Explain how binding of instructions and data to memory addresses can be done?
(Or)
b) Explain the difference between internal and external fragmentation
- 14 a) Define Thrashing. Explain the cause of Thrashing.
(Or)
b) Describe in detail about the File attributes.
- 15.a) Explain the common technique used for implementing file types.
(Or)
b) Explain the most common system calls relating to files operations.

PART-C

ANSWER ANY TWO QUESTIONS:

(2x20=40 marks)

16. a) What are the two models of interprocess communication? What are the strengths and weaknesses of the two approaches.

b) Assume you have the following jobs to execute with one processor, with the jobs arriving in the order listed here:

i	T (pi)	Arrival Time
0	80	0
1	20	10
2	10	10
3	20	80
4	50	85

i. Suppose a system uses RR scheduling with a quantum of 15. Create a Gantt chart illustrating the execution of these processes?

ii. What is the turnaround time for process p3?

iii. What is the average wait time for the processes?

17. a) Describe the basic method and its hardware in segmentation.

b) Discuss in detail about any five page replacement algorithms.

18. a) Explain the Disk scheduling algorithm with an example.

b) Explain the uses of Swap-Space.

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