



**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**

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

FIFTH SEMESTER – NOVEMBER 2015

**CS 5510/CA 5510 - OPERATING SYSTEMS**

Date : 05/11/2015

Dept. No.

Max. : 100 Marks

Time : 09:00-12:00

**PART - A**

**ANSWER ALL THE QUESTIONS:**

**(10 x 2 = 20 marks)**

1. Define Process.
2. What is a thread?
3. State the necessary conditions for Deadlock.
4. What is a CPU Scheduler?
5. What is Dynamic Loading?
6. Differentiate Logical and Physical Address Space.
7. List down different file attributes.
8. What is Virtual Memory?
9. What is a Boot Control Block?
10. Define Buffer and the reasons for Buffering.

**PART - B**

**ANSWER ALL THE QUESTIONS:**

**(5 x 8 = 40 marks)**

11. a) Explain about the Operations on Processes.

**(OR)**

- b) Discuss on different Operating System Services.

12. a) Explain about how to recover from deadlock in detail.

**(OR)**

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

Process	Burst Time
1	53
2	17
3	68
4	24

The system uses Round Robin Scheduling and the Time Quantum is 20

a. Create a Gantt chart illustrating the execution of these processes.

b. What is the average wait time and turnaround time for the processes?

13. a) Explain about swapping.  
(OR)  
b) Discuss on Fragmentation in detail.
14. a) Explain Thrashing in detail.  
(OR)  
b) Discuss on File Protection in detail.
15. a) Explain about I/O hardware in detail.  
(OR)  
b) Write about Disk Management in detail.

**PART - C**

**ANSWER ANY TWO QUESTIONS:**

**(2 x 20 = 40 marks)**

16. a) Explain about semaphores in detail.  
b) Discuss on Banker's Algorithm for Deadlock Avoidance.
17. a) Explain about Paging in detail.  
b) Find out the Number of page faults with the FIFO and Least Recently used page scheduling algorithms:           Number of page frames : 4  
                                  Page Reference String: 1 2 3 2 1 5 2 1 6 2 5 6 3 1 3 6 1 2 4 3.
18. a) Explain about Directory Structure.  
b) Discuss on various Allocation methods.

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