

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
LOKNAYAK JAI PRAKASH INSTITUTE OF TECHNOLOGY
CHAPRA, BIHAR

Subject: Operating Systems **Assignment- 1** **Subject Code:** CS 1403

1. Explain the Layered Structure of Operating System with the help of Diagram. What are goals of OS? Write down all its functions.
2. What is Process Control Block? Explain it. Discuss the difference between Short Term, Medium Term and Long Term Scheduler.
3. Differentiate between Pre-emptive and Non Pre-emptive Scheduling Algorithm with Block Diagram ?
4. Discuss the Performance Criteria of CPU Scheduling.
5. Explain the concept of Process with the help of State transition diagram. Discuss the various process states.
6. What is Operating System? Explain the different views of Operating Systems. Also explain the types of operating System.
7. What is Interrupt? Describe the basic interrupt mechanism.
8. Consider the following set of processes with the length of CPU Burst time in millisecond:

Process	CPU Burst time(MS)	Priority
P1	10	3
P2	1	1
P3	2	3
P4	1	4
P5	5	2

The processes are assumed to be arrived in order p1, p2, p3, p4, p5 and all at time 0.

- a. **Draw Gantt chart, illustrating the execution of these processes using FCFS, SF and Round Robin (Time quantum = 1) Scheduling.**
 - b. **What is turnaround time of each process for each of the above scheduling algorithm part (a).**
 - c. **What is waiting time of each process for each of the above scheduling algorithm part (a).**
 - d. **Which of the Schedules in part (a) , results in overall minimum average waiting time.**
9. Define the following terms:
- a) System Calls
 - b) Kernel
 - c) Thread
 - d) Fork()
 - e) Context Switch
 - f) Dispatcher