Assignment No. 1

1. What is Operating System? What are the functions performed by Operating System?
2. Discuss the following:
   i. Multiprogramming ii Multiprocessing iii Multitasking
3. What are distributed operating systems? What are the basic advantages of using them?
4. What is spooling? What are the advantages of spooling?
5. What are real time operating systems?

Assignment No. 2

1. Define the term process. Explain the different states of a process/ List at least six components of a process control block.
2. Define pre-emptive and non pre-emptive scheduling.
3. What is CPU scheduling? Explain Long term, medium term and short term scheduling.
4. Consider the following set of processes, with the length of the CPU burst given in milliseconds:

Process	Arrival time	Burst Time	Priority
P1	0	20	4
P2	1	5	3
P3	2	8	1
P4	3	6	2
P5	4	10	4

(a) Draw the Gantt chart that illustrate the execution of these processes using the following scheduling algorithms:

- FCFS
- SJF
- Round Robin with quantum = 3
- SRTF
- Priority

(b) What is the average turn around time for each of the scheduling algorithm in part (a)?

(c) What is the average waiting time for each of the scheduling algorithm in part (a)?

Assignment No. 3

1. What is paging?
2. Explain the difference between external and internal fragmentation.
3. Write a short note on segmentation.
4. When do page faults occur? Describe the action taken by the operating system when a page fault occurs?
5. Consider the following page reference string:
   1, 2, 3, 4, 2, 1, 5, 6, 1, 2, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6
   How many page faults would occur for the following replacement algorithms assuming three frames:
   a) LRU b) FIFO c) Optimal
6. What is thrashing? What is the reason for it?
7. Write short note on Belady's anomaly.