Assignment -1

Unit-1:

(1) Define Operating System.
(2) Define: Program, Software, Hardware
(3) What are the needs of an Operating system?
(4) What are system calls? What is the use of them?
(5) Advantages and Disadvantages of multitasking systems?
(6) Briefly define functions of OS.
(7) How does the real time operating system work? What is the critical parameter in it?

(8) What happens when we turn on the computer? Explain the process.
(9) Privileged and Non-Privileged Instructions Hint: In perspective of User mode, kernel mode
(10) Explain working of Virtual Machine architecture with Advantages, disadvantages and examples.

Unit-2:

Problem 1:

Assume that you have the following processes all arriving at time 0:

Process	Burst	Priority
P_1	8	4
P_2	6	1
P_3	1	2
P_4	9	2
P_5	3	3

For each of the following CPU scheduling algorithms, determine the turnaround and wait times for each process as well as the average wait and turnaround times.

First Come First Serve

Shortest Job First

Non-Preemptive Priority Scheduling

Round Robin (assume a quantum of 1ms)

Which of the four algorithms has the shortest wait time? Which has the fastest average turnaround time?

Problem 2:

Let's change the assumptions and now assume that the jobs arrive at different times as follows:

Process	Burst	Priority	Arrival Time
P_1	8	4	0
P_2	6	1	2
P_3	1	2	2
P_4	9	2	1
P_5	3	3	3

Calculate the turnaround and wait times for the following algorithms:

First Come First Serve

Non-Preemptive Priority Scheduling

Preemptive Priority Scheduling

Round Robin (assume a quantum of 1ms)