Operating Systems MID I Question Bank

UNIT-I

1. a) With a neat sketch, Explain in detail about the interrelation between various services provided by the operating system.
   b) Define operating system and give examples. Draw the abstract view of the components of Computer System.
2. a)What is system calls in OS?
   b) Explain in detail with its types.
3. a) Draw and explain OS layered and modular architecture.
   b) Explain the Multi Programming and Time-shared operating system.
4. a) Explain briefly about Operating System Operations.
   b) Discuss the important functions of an operating System.

UNIT-II

1. a) Define process. Draw the process state diagram and explain its states.
   b) Describe about the process control block.

2. a) Describe short-term, medium-term, and long-term scheduling.
   b) What is IPC? Explain in detail the shared memory inter process communication models.

3. a) Explain the FCFS scheduling algorithm with a suitable example.
   b) Consider the following four processes represented as (Process, Arrival Time, Burst Time) with the length of CPU burst in milliseconds. { (P1, 0, 10), (P2, 1, 7), (P3, 2, 13), (P4, 3, 11) }. Using preemptive SJF scheduling: i) Draw Gantt chart. ii) Calculate average waiting time.

4. a) Explain the Message passing model of IPC mechanism.
   b) Consider the set of 5 processes whose arrival time and burst time are given below-

Process Id	Arrival time	Burst time	Priority
P1	0	4	2
P2	1	3	3
P3	2	1	4
P4	3	5	5
P5	4	2	5

If the CPU scheduling policy is priority preemptive, calculate the average waiting time and average turnaround time. (Higher number represents higher priority)