Operating Systems
Spring 2011 Mid #2
Time 1½ Hour – Marks 50

Q1. Consider the following set of processes, with the length of the CPU burst time given in milliseconds. (10+5+5)

Process	Burst Time	Priority	Arrival time
P1	6	3	2
P2	7	2	3
P3	6	5	4
P4	4	1	4
P5	3	4	5

A. Consider the execution of these processes using SJF and Preemptive SJF Scheduling algorithms, draw Gantt charts for each process for each of the scheduling algorithms.

B. What is the response time of each process for each of the scheduling algorithms?

C. What is the turnaround time of each process for each of the scheduling algorithms?

Q2. What are the three basic conditions for the solution of a Critical Section problem? Define and explain each of them. (10)

Q3. The following code segments are two independent threads of the same program manipulating a circular queue tsbuff. Is there any critical section code? If yes, then point out and elaborate the operation where mutual exclusion is required; and ensure mutual exclusion using semaphores. (10)