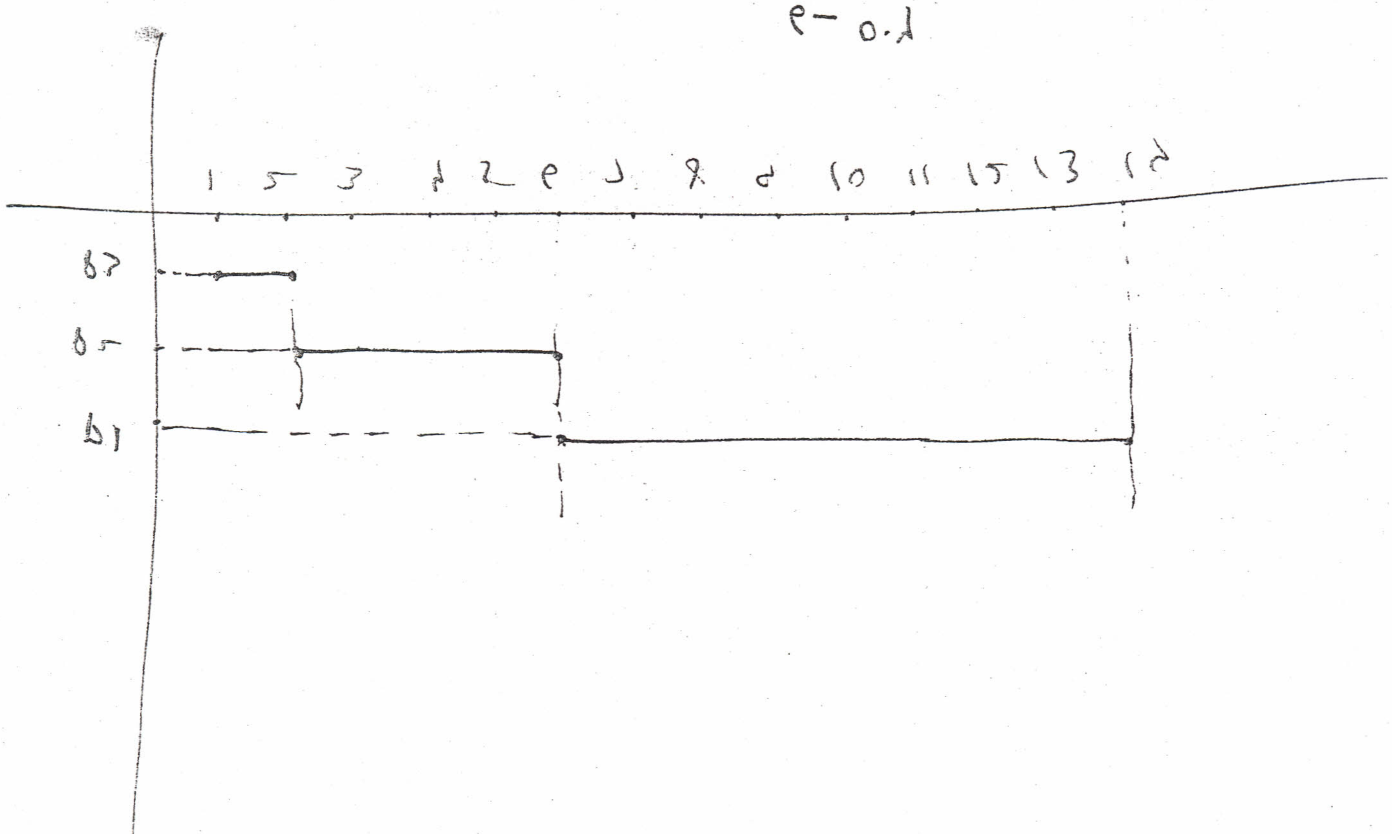
$WT_3 = 0$ $WT_2 = 1.6$ $WT_1 = 6$

$$\begin{array}{r} 14 \\ 5.6 \\ 1 \\ \hline 20.6 \\ \hline 3 \end{array} = 6.67$$

$TT_3 = 1.0$ $TT_2 = 5.6$ $TT_1 = 14$

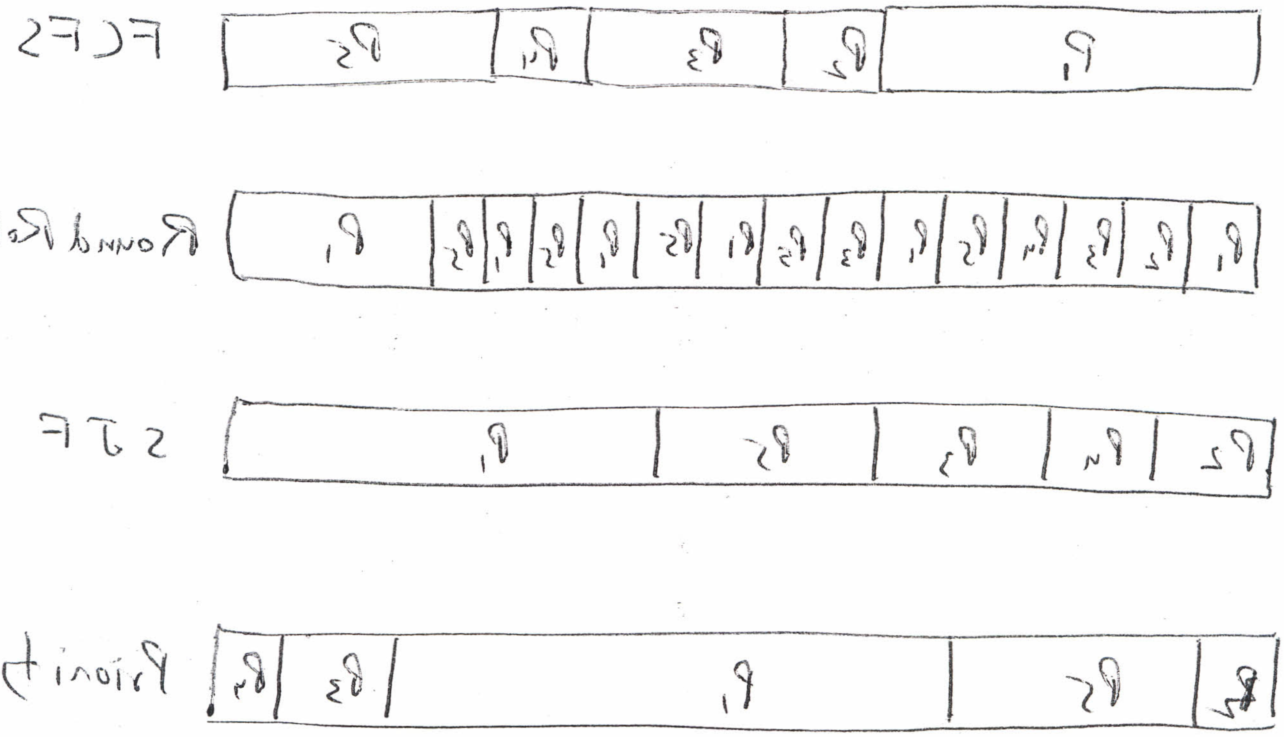
$6 - 0.4$



nswer 1

Tutorial 4

a) The Gantt charts are



b) Turn around time

	FCFS	RR	SJF	Priority
P1	10	19	19	16
P2	11	2	1	1
P3	13	7	4	18
P4	14	4	2	19
P5	19	14	9	6

c) Waiting time = |turnaround time − burst time|

CSC 227 Tutorial 5

Question 1

Consider the following set of processes, with the length of the CPU-burst time given in milliseconds:

Process	Burst Time	Priority
P1	10	3
P2	1	1
P3	2	3
P4	1	4
P5	5	2

The processes are assumed to have arrived in the order P1, P2, P3, P4, P5, all at time 0.

a) Draw four Gantt charts illustrating the execution of these processes using FCFS, SJF, a nonpreemptive priority (a smaller priority number implies a higher priority), and RR (quantum = 1) scheduling.

b) What is the turnaround time of each process for each of the scheduling algorithms in part a?

c) What is the waiting time of each process for each of the scheduling algorithms in part a?

d) Which of the schedules in part a results in the minimal average waiting time (over all processes)?

Question 2

Suppose that the following processes arrive for execution at the times indicated. Each process will run the listed amount of time. In answering the questions, use nonpreemptive scheduling and base all decisions on the information you have at the time the decision must be made.

Process	Arrival Time	Burst Time
P1	0.0	8
P2	0.4	4
P3	1.0	1

a. What is the average turnaround time for these processes with the FCFS scheduling algorithm?

b. What is the average turnaround time for these processes with the SJF scheduling algorithm?

c. The SJF algorithm is supposed to improve performance, but notice that we chose to run process P1 at time 0 because we did not know that two shorter processes would arrive soon. Compute what the average turnaround time will be if the CPU is left idle for the first 1 unit and then SJF scheduling is used. Remember that processes P1 and P2 are waiting during this idle time, so their waiting time may increase. This algorithm could be known as future-knowledge scheduling.