1. In relation to CPU Scheduling, describe the difference between preemptive and non-preemptive scheduling schemes.

In preemptive scheduling, the CPU is allocated to the processes for a limited time whereas, in non-preemptive scheduling, the CPU is allocated to the process till it terminates or switches to the waiting state.

1. State if the following scheduling schemes are preemptive or non-preemptive:
   1. FCFC: non-preemptive
   2. SJF: non-preemptive
   3. SRTF: preemptive
   4. RR: preemptive
2. Using the table below, draw the Gantt chart for FCFS scheduling.

0 11 16 40 56

|  |  |  |  |
| --- | --- | --- | --- |
| P1 | P3 | P0 | P2 |

1. Using the same table below, draw the Gantt chart for SJF scheduling.

0 11 16 32 56

|  |  |  |  |
| --- | --- | --- | --- |
| P1 | P3 | P2 | P0 |

1. Using the same table below, draw the Gantt chart for SRTF scheduling.

0 4 9 16 32 56

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| P1 | P3 | P1 | P2 | P0 |

1. Using the same table below, draw the Gantt chart for RR (Quantum = 5) scheduling.

0 5 10 15 20 25 26 31 36 41

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| P1 | P3 | P1 | P0 | P2 | P1 | P0 | P2 | P0 |

* 41 46 51 52 56

|  |  |  |  |
| --- | --- | --- | --- |
| P2 | P0 | P2 | P0 |

|  |  |  |
| --- | --- | --- |
| Process | Burst Time | Arrival Time |
| P0 | 24 | 10 |
| P1 | 11 | 0 |
| P2 | 16 | 11 |
| P3 | 5 | 4 |

\*All Gantt charts must clearly show the order, name, start time, and end time for each process for full credit.

1. Using the answer from part 3, calculate the average waiting time.

(6+29+7)/4=10.5

1. Using the answer from part 4, calculate the average waiting time.

(7+5+22)/4=8.5

1. Using the answer from part 5, calculate the average waiting time.

(5+5+22) = 8

1. Using the answer from part 6, calculate the average waiting time.

(17+10+20+6) = 13.25