Calculating the Service time for the algorithms where applicable and drawing the Gantt chart for the following algorithm:

|  |  |  |
| --- | --- | --- |
| PROCESS ID | ARRIVAL TIME | EXECUTION TIME |
| P1 | 3 | 1 |
| P2 | 1 | 4 |
| P3 | 4 | 2 |
| P4 | 0 | 6 |
| P5 | 2 | 3 |

1. First Come First Serve (FCFS)

FCFS executes the processes in the order they arrive below is the table and Gantt chart

| P4 | P2 | P5 | P1 | P3 |

0 6 10 13 14 16

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Process | Arrival Time | Burst Time | Completion Time | Turnaround Time | Waiting Time |
| P4 | 0 | 6 | 6 | 6 | 0 |
| P2 | 1 | 4 | 10 | 9 | 5 |
| P5 | 2 | 3 | 13 | 11 | 8 |
| P1 | 3 | 1 | 14 | 11 | 10 |
| P3 | 4 | 2 | 16 | 12 | 10 |

1. Shortest Job First (SJF)

SJF select the process with shortest burst time for execution below the table and Gantt chart.

| P4 | P1 | P3 | P5 | P2 |

0 6 7 9 12 16

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Process | Arrival Time | Burst Time | Completion Time | Turnaround Time | Waiting Time |
| P4 | 0 | 6 | 6 | 6 | 0 |
| P1 | 3 | 1 | 7 | 4 | 3 |
| P3 | 4 | 2 | 9 | 5 | 3 |
| P5 | 2 | 3 | 12 | 10 | 7 |
| P2 | 1 | 4 | 16 | 15 | 11 |

1. Shortest Remaining Time (SRT)

This algorithm selects the process with the shortest remaining time, pre-empting ongoing processes when a shorter one arrives.

| P4 | P2 | P1 | P3 | P2 |

0 1 3 4 6 16

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Process ID | Arrival Time | Burst Time | Completing Time | Turnaround Time | Waiting Time |
| P4 | 0 | 6 |  |  |  |
| P2 | 1 | 4 |  |  |  |
| P5 | 2 | 3 |  |  |  |
| P1 | 3 | 1 |  |  |  |
| P3 | 4 | 2 |  |  |  |