**FCFS**

**Problem 1**

**In the given table, processes are listed with their burst time and arrival time. If FCFS is applied, then find out the following things:**

**i. Gantt Chart**

**ii. Avg. waiting time**

|  |  |  |
| --- | --- | --- |
| **Process** | **Burst Time** | **Arrival Time** |
| P1 | 14 | 0 |
| P2 | 7 | 6 |
| P3 | 18 | 9 |
| P4 | 4 | 11 |
| P5 | 22 | 14 |
| P6 | 4 | 16 |
| P7 | 13 | 20 |

**Problem 2**

**In the given table, processes are listed with their burst time and arrival time. If FCFS is applied, then find out the following things:**

**i. Gantt Chart**

**ii. Avg. response time**

|  |  |  |
| --- | --- | --- |
| **Process** | **Burst Time** | **Arrival Time** |
| P1 | 4 | 0 |
| P2 | 7 | 6 |
| P3 | 8 | 9 |
| P4 | 4 | 11 |
| P5 | 2 | 11 |
| P6 | 4 | 11 |
| P7 | 13 | 11 |

**SJF**

**Problem 3**

**In the given table, processes are listed with their burst time and arrival time. If SJF is applied, then find out the following things:**

**i. Gantt Chart**

**ii. Avg. waiting time**

|  |  |  |
| --- | --- | --- |
| **Process** | **Burst Time** | **Arrival Time** |
| P1 | 3 | 0 |
| P2 | 2 | 2 |
| P3 | 7 | 4 |
| P4 | 1 | 5 |
| P5 | 6 | 6 |

**Problem 4**

**In the given table, processes are listed with their burst time and arrival time. If SJF is applied, then find out the following things:**

**i. Gantt Chart**

**ii. Avg. waiting time**

|  |  |  |
| --- | --- | --- |
| **Process** | **Burst Time** | **Arrival Time** |
| P1 | 5 | 1 |
| P2 | 4 | 2 |
| P3 | 3 | 4 |
| P4 | 2 | 5 |
| P5 | 1 | 6 |

**Preemptive SJF**

**Problem 5**

**In the given table, processes are listed with their burst time and arrival time. If Preemptive SJF/SRTF is applied, then find out the following things: [If burst time is same then look at arrival time]**

**i. Gantt Chart**

**ii. Avg. waiting time**

|  |  |  |
| --- | --- | --- |
| **Process** | **Burst Time** | **Arrival Time** |
| P1 | 1 | 5 |
| P2 | 6 | 2 |
| P3 | 3 | 4 |
| P4 | 2 | 4 |
| P5 | 4 | 3 |

**Problem 6**

**In the given table, processes are listed with their burst time and arrival time. If Preemptive SJF/SRTF is applied, then find out the following things: [If burst time is same then look at arrival time]**

**i. Gantt Chart**

**ii. Avg. waiting time**

|  |  |  |
| --- | --- | --- |
| **Process** | **Burst Time** | **Arrival Time** |
| P1 | 3 | 0 |
| P2 | 2 | 2 |
| P3 | 7 | 4 |
| P4 | 1 | 5 |
| P5 | 6 | 6 |

**Round robin**

**Problem 7**

**In the given table, processes are listed with their burst time and arrival time. If Round Robin is applied with Time Quantum = 2, then find out the following things:**

**i. Gantt Chart**

**ii. Avg. waiting time**

|  |  |  |
| --- | --- | --- |
| **Process** | **Arrival Time** | **Burst Time** |
| P1 | 0 | 4 |
| P2 | 1 | 6 |
| P3 | 5 | 1 |
| P4 | 6 | 3 |
| P5 | 8 | 4 |

**Problem 8**

**In the given table, processes are listed with their burst time and arrival time. If Round Robin is applied with Time Quantum = 3, then find out the following things:**

**i. Gantt Chart**

**ii. Avg. waiting time**

|  |  |  |
| --- | --- | --- |
| **Process** | **Arrival Time** | **Burst Time** |
| P1 | 0 | 6 |
| P2 | 2 | 9 |
| P3 | 3 | 3 |
| P4 | 6 | 4 |
| P5 | 8 | 5 |

**Priority Scheduling**

**Problem 9**

**In the given table, processes are listed with their burst time and arrival time. If Priority Scheduling is applied, then find out the following things:**

**i. Gantt Chart**

**ii. Avg. waiting time**

|  |  |  |
| --- | --- | --- |
| **Process** | **Burst Time** | **Priority** |
| P1 | 7 | 5 |
| P2 | 1 | 2 |
| P3 | 3 | 1 |
| P4 | 2 | 4 |
| P5 | 5 | 3 |
| P6 | 8 | 6 |
| P7 | 1 | 7 |

**Priority Scheduling**

**Problem 10**

**In the given table, processes are listed with their burst time and arrival time. If Priority Scheduling is applied, then find out the following things:**

**i. Gantt Chart**

**ii. Avg. waiting time**

|  |  |  |
| --- | --- | --- |
| **Process** | **Burst Time** | **Priority** |
| P1 | 5 | 1 |
| P2 | 4 | 3 |
| P3 | 8 | 5 |
| P4 | 3 | 2 |
| P5 | 10 | 4 |
| P6 | 3 | 7 |
| P7 | 10 | 6 |

**Solution**

**Problem 1**

**i.**

**ii. Waiting Time:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| P1 | P2 | P3 | P4 | P5 | P6 | P7 |
| 0 | 14-6= 8 | 21-9= 12 | 39-11= 28 | 43-14= 29 | 65-16=49 | 69-20= 49 |

**Avg. waiting time = (0+8+12+28+29+45+49)/7 = 25**

**Problem 3**

**i.**

**ii. Waiting Time:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **P1** | **P2** | **P3** | **P4** | **P5** |
| **0** | **3-2 = 1** | **12-4 = 8** | **5-5 = 0** | **6-6 = 0** |

**Avg. waiting time = (0+1+8+0+0)/5 = 1.8**

**Problem 5**

**i.**

**Problem 7**

**i.**

**Problem 9**

**i.**

**ii. Waiting Time:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **P1** | **P2** | **P3** | **P4** | **P5** | **P6** | **P7** |
| **11** | **3** | **0** | **9** | **4** | **18** | **26** |

**Avg. Waiting Time: (11+3+0+9+4+18+26)/7 = 10.14**