## Part E :

**. Consider the following processes with arrival times and burst times:**

**| Process | Arrival Time | Burst Time |**

**|---------|--------------|------------|**

**| P1 | 0 | 5 |**

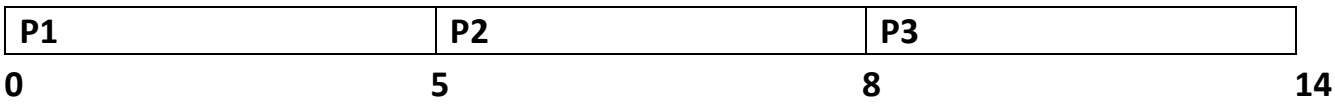
**| P2 | 1 | 3 |**

**| P3 | 2 | 6 |**

**Calculate the average waiting time using First-Come, First-Served (FCFS) scheduling.**

| Pid | Arival Time | Burst Time | Completion time | Turn around time | Wating time |
|---|---|---|---|---|---|
| P1 | 0 | 5 | 5 | 5 | 0 |
| P2 | 1 | 3 | 8 | 7 | 1 |
| P3 | 2 | 6 | 14 | 12 | 2 |

**Gannt chart-(Non Preemptive)**




**WT= TAT-BT**

**TAT=CT-AT**

**Avg waiting time is( 0+1+2)/3=1units.**

**2. Consider the following processes with arrival times and burst times:**

**| Process | Arrival Time | Burst Time |**

**|---------|--------------|------------|**

**| P1 | 0 | 3 |**

**| P2 | 1 | 5 |**

**| P3 | 2 | 1 |**

**| P4 | 3 | 4 |**

**Calculate the average turnaround time using Shortest Job First (SJF) scheduling.**

| Pid | Arival Time | Burst Time | Completion time | Turn around time |
|---|---|---|---|---|
| P1 | 0 | 3 | 3 | 3 |
| P2 | 1 | 5 | 8 | 7 |
| P3 | 2 | 1 | 9 | 7 |
| P4 | 3 | 4 | 13 | 10 |

**Gannt chart-(Non Preemptive)**

| P1 | P2 | P3 | P4 |
|---|---|---|---|

**0 3 8 9 14**

**TAT=CT-AT**

**Average TAT = (3+7+7+10)/4=6.75units**

**3. Consider the following processes with arrival times, burst times, and priorities (lower number**

**indicates higher priority):**

**| Process | Arrival Time | Burst Time | Priority |**

**|---------|--------------|------------|----------|**

**| P1 | 0 | 6 | 3 |**

**| P2 | 1 | 4 | 1 |**

**| P3 | 2 | 7 | 4 |**

**| P4 | 3 | 2 | 2 |**

**Calculate the average waiting time using Priority Scheduling.**

| PID | Arival time | Burst time | priority | Completion time | Turn Around time | Wating time. |
|---|---|---|---|---|---|---|
| P1 | 0 | 6 | 3 | 4 | 4 | 2 |
| P2 | 1 | 4 | 1 | 6 | 5 | 1 |
| P3 | 2 | 7 | 4 | 9 | 7 | 0 |
| P4 | 3 | 2 | 2 | 16 | 13 | 11 |

| P1 | P2 | P3 | P4 |
|---|---|---|---|

0 4 6 9 16

**WT= TAT-BT**

**TAT=CT-AT**

**Avg waiting time is( 0+1+2+11)/4=3.5 units.**

**4. Consider the following processes with arrival times and burst times, and the time quantum for**

**Round Robin scheduling is 2 units:**

**| Process | Arrival Time | Burst Time |**

**|---------|--------------|------------|**

**| P1 | 0 | 4 |**

**| P2 | 1 | 5 |**

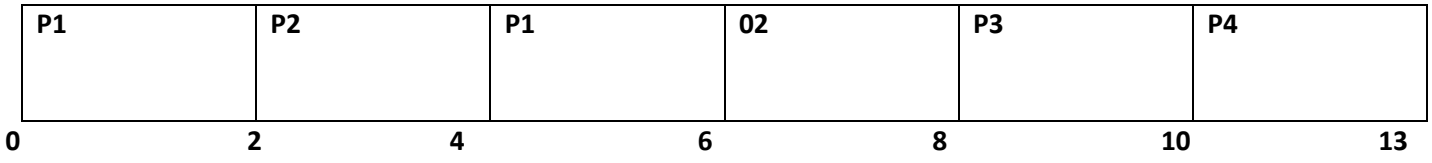
**| P3 | 2 | 2 |**

**| P4 | 3 | 3 |**

**Calculate the average turnaround time using Round Robin scheduling.**

| Process Id | Arival time | Burst time | Completion time | Turn Around time |
|---|---|---|---|---|
| P1 | 0 | 4 | 6 | 6 |
| P2 | 1 | 5 | 8 | 7 |
| P3 | 2 | 2 | 10 | 8 |
| P4 | 3 | 3 | 13 | 10 |

**Gantt Chart _**




**TAT=CT-AT**

**Avg Turn around time is(6+7+8+10)/4=7.75 units.**

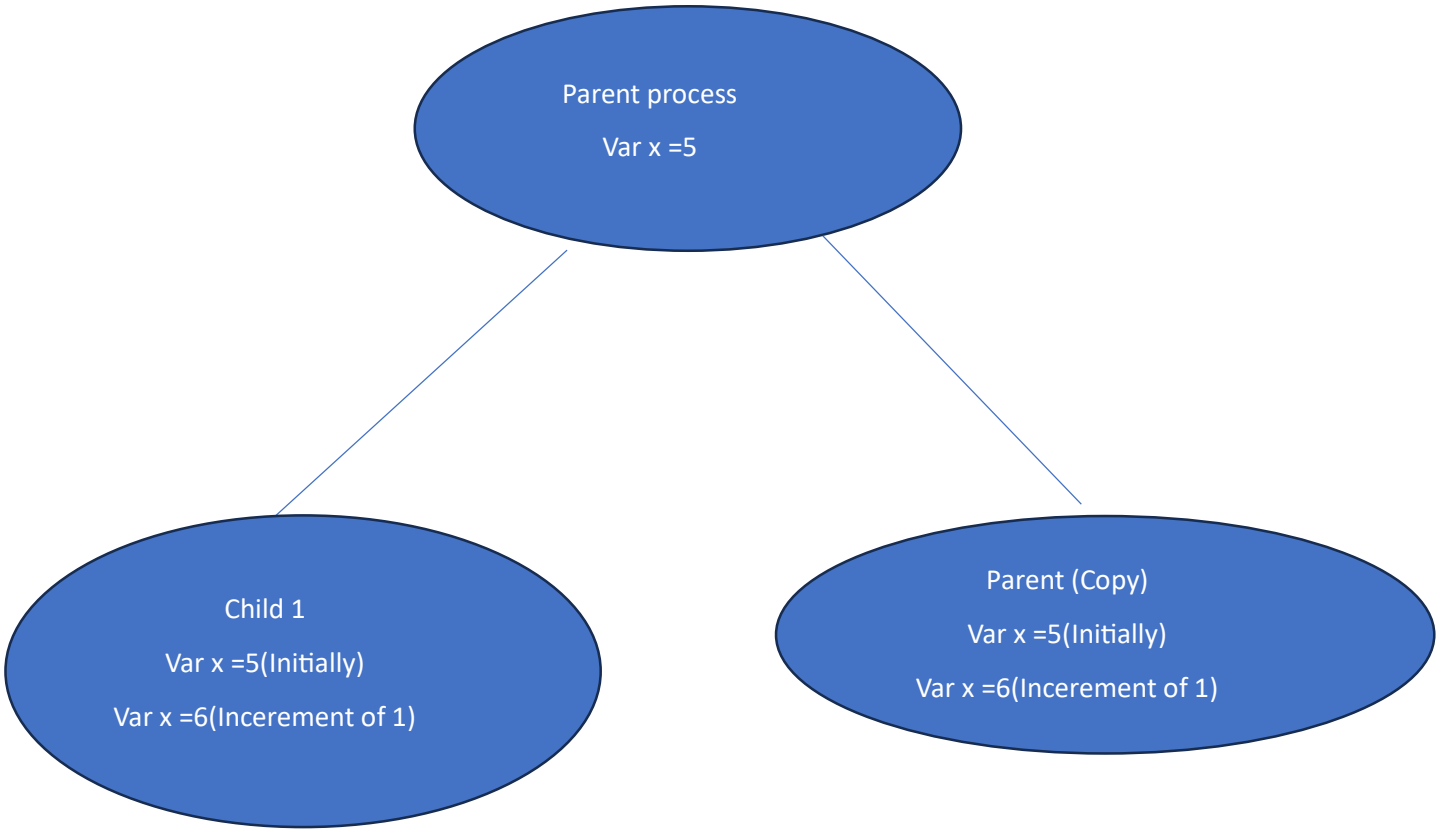
**5. Consider a program that uses the fork() system call to create a child process. Initially, the parent**

**process has a variable x with a value of 5. After forking, both the parent and child processes**

**increment the value of x by 1.**

**What will be the final values of x in the parent and child processes after the fork() call?**

**Ans-**




**So after fork call the value of x will be 6 in child and also in parent copy**