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B-TECH CSE (2ND YR)

OPERATING SYSTEM ASSIGNMENT

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**6. 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?**

FCFS Gantt Chart

Proc: 1 2 3

|---------------|-------|----|

Time: 0 8 12 13

Average Turnaround Time: ( (8-0)+(12-0.4)+(13-1.0) ) / 3 = 10.53

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

SJF Gantt Chart

Proc: 1 3 2

|---------------|--|--------|

Time: 0 8 9 13

Average Turnaround Time: ( (8-0)+(13-0.4)+(9-1.0) ) / 3 = 9.53

**C**. **Compute what 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 *P*1 and *P*2 are waiting during this idle time, so their waiting time may increase.**

Proc: x 3 2 1

|--|--|---------|-----------------|

Time: 0 1 2 6 14

Average Turnaround Time = ( (14-0)+(6-0.4)+(2-1.0) ) / 3 = 6.87