JAMHURIYA UNIVERSITY OF SCIENCE & TECHNOLOGY

Course Title: Principles of Operating System

Class: CA191, CA192, CA193, CA194

Scheduling Algorithms Assignment

Deadline: May 31, 2023

Problem 1

Process	Burst Time
P_1	6
P_2	10
P_3	8

Suppose that the processes arrive in the order: P_1, P_2, P_3 Draw Gantt chart then calculate waiting time and turnaround time for each process, and average waiting time and average turnaround time using **first come first served algorithm (FCFS)**.

Problem 2

Process	Burst Time
P_1	10
P_2	6
P_3	20
P_4	8

Suppose that the processes arrive in the order: P_1, P_2, P_3, P_4. Draw Gantt chart then calculate waiting time and turnaround time for each process, and average waiting time and average turnaround time using **first come first served algorithm (FCFS)**.

Problem 3

Process	Burst Time
P_1	12
P_2	8
P_3	6

Suppose that the processes arrive at the same time. Draw Gantt chart then calculate waiting time and turnaround time for each process, and average waiting time and average turnaround time using **shortest job first (SJF)**.

Problem 4

Given the following processes with their **arrival time** and **burst time**.

Process	Arrival Time	Burst Time
P_1	1	7
P_2	3	3
P_3	6	2
P_4	7	10
P_5	9	8

Draw Gantt chart then calculate waiting time and turnaround time for each process, and average waiting time and average turnaround time using **shortest job first (SJF)**.

Problem 5

Process	Burst Time	Priority
P_1	5	3
P_2	2	5
P_3	10	4
P_4	3	1
P_5	7	2

Suppose that the processes arrive at the same time. Draw Gantt chart then calculate waiting time and turnaround time for each process and average waiting time and average turnaround time using **priority scheduling algorithms**.

Problem 6

Process	**Burst Time**	**Priority**
P_1	4	5
P_2	3	3
P_3	5	2
P_4	10	4
P_5	3	1

Suppose that the processes arrive at the same time. Draw Gantt chart then calculate waiting time and turnaround time for each process and average waiting time and average turnaround time using **priority scheduling algorithms**.

Problem 7

Process	Burst Time
P_1	27
P_2	10
P_3	20

Suppose that the processes arrive at the same time. Draw Gantt chart then calculate waiting time and turnaround time for each process, and average waiting time and average turnaround time using **round robin algorithm (RR) with time quantum = 8**.

Problem 8

Process	**Burst Time**
P_1	20
P_2	3
P_3	12

Suppose that the processes arrive at the same time. Draw Gantt chart then calculate waiting time and turnaround time for each process, and average waiting time and average turnaround time using **round robin algorithm (RR) with time quantum = 5 milliseconds**.

END