Ex. No. 6c) PRIORITY SCHEDULING

Progam Code:

```
    // Input burst time and priority
    for (i = 0; i < n; i++) {
        printf("Enter burst time for P[%d]: ", i + 1);
        scanf("%d", &bt[i]);
        printf("Enter priority for P[%d] (lower number = higher priority): ", i + 1);
        scanf("%d", &priority[i]);
        p[i] = i + 1;  // store process ID
    }

    // Sort processes based on priority (ascending order)
    for (i = 0; i < n - 1; i++) {
        for (j = 0; j < n - i - 1; j++) {
            if (priority[j] > priority[j + 1]) {
                // Swap priority
                temp = priority[j];
                priority[j] = priority[j + 1];
                priority[j + 1] = temp;

                // Swap burst time
                temp = bt[j];
                bt[j] = bt[j + 1];
                bt[j + 1] = temp;

                // Swap process number
                temp = p[j];
                p[j] = p[j + 1];
                p[j + 1] = temp;
            }
        }
    }

    // Waiting time for first process is 0
    wt[0] = 0;

    // Calculate waiting time
    for (i = 1; i < n; i++) {
        wt[i] = 0;
        for (j = 0; j < i; j++)
            wt[i] += bt[j];
        avg_wt += wt[i];
    }

    // Calculate turnaround time
    for (i = 0; i < n; i++) {
        tat[i] = bt[i] + wt[i];
        avg_tat += tat[i];
    }

    avg_wt /= n;
    avg_tat /= n;

    // Print output
    printf("\nProcess\tBurst Time\tPriority\tWaiting Time\tTurnaround Time\n");
    for (i = 0; i < n; i++) {
        printf("P[%d]\t%d\t\t%d\t\t%d\t\t%d\n", p[i], bt[i], priority[i], wt[i], tat[i]);
    }

    printf("\nAverage Waiting Time: %.2f", avg_wt);
    printf("\nAverage Turnaround Time: %.2f\n", avg_tat);

    return 0;
}
```

Output (6c Priority Scheduling):

```
Enter the number of processes: 3
Enter burst time for P[1]: 5
Enter priority for P[1] (lower number = higher priority): 2
Enter burst time for P[2]: 3
Enter priority for P[2] (lower number = higher priority): 1
Enter burst time for P[3]: 8
Enter priority for P[3] (lower number = higher priority): 3

Process Burst Time      Priority        Waiting Time    Turnaround Time
P[2]    3               1               0               3
P[1]    5               2               3               8
P[3]    8               3               8               16

Average Waiting Time: 3.67
Average Turnaround Time: 9.00
```