8. Construct a C program to simulate Round Robin scheduling algorithm with C.

PROGRAM :

```
#include<stdio.h>
#include<conio.h>
int main() {
int i, NOP, sum=0,count=0, y, quant, wt=0, tat=0, at[10], bt[10], temp[10];
float avg_wt, avg_tat;
printf(" Total number of process in the system: ");
scanf("%d", &NOP);
y = NOP;
for(i=0; i<NOP; i++) {
printf("\n Enter the Arrival and Burst time of the Process[%d]\n", i+1);
printf("Arrival time is: \t");
scanf("%d", &at[i]);
scanf("%d", &bt[i]);
temp[i] = bt[i]; }
printf("Enter the Time Quantum for the process: \t");
scanf("%d", &quant);
printf("\n Process No \t\t Burst Time \t\t TAT \t\t Waiting Time ");
for(sum=0, i = 0; y!=0;)
{
if(temp[i] <= quant && temp[i] > 0)
{
sum = sum + temp[i];
temp[i] = 0;
count=1;
}
else if(temp[i] > 0)
{
temp[i] = temp[i] - quant;
```

```
sum = sum + quant;
}
if(temp[i]==0 && count==1)
{
y--;
printf("\nProcess No[%d] \t\t %d\t\t\t\t %d\t\t\t %d", i+1, bt[i], sum- at[i], sum-at[i]-bt[i]);
wt = wt+sum-at[i]-bt[i];
tat = tat+sum-at[i]; count =0;
}
if(i==NOP-1)
{
i=0;
}
else if(at[i+1]<=sum) {
i++;
}
else
{
i=0; }
}
avg_wt = wt * 1.0/NOP;
avg_tat = tat * 1.0/NOP;
printf("\n Average Turn Around Time: \t%f", avg_wt); printf("\n Average Waiting Time: \t%f", avg_tat); getch();
}
```

OUTPUT :

```
 Total number of process in the system: 4

 Enter the Arrival and Burst time of the Process[1]
Arrival time is:        1 23

 Enter the Arrival and Burst time of the Process[2]
Arrival time is:        2 32

 Enter the Arrival and Burst time of the Process[3]
Arrival time is:        3 2

 Enter the Arrival and Burst time of the Process[4]
Arrival time is:        4 45
Enter the Time Quantum for the process:         5

 Process No              Burst Time              TAT             Waiting Time
Process No[3]            2                               9                       7
Process No[1]            23                              64                      41
Process No[2]            32                              85                      53
Process No[4]            45                              98                      53
 Average Turn Around Time:      38.500000
 Average Waiting Time:  64.000000
```