CLO#	Course Learning Outcome (CLO)	Taxonomy Level	Mapping to PLO
CLO 3	**Compare** algorithms and techniques related to various OS services and core functionality, along with their performance issues.	C4	3

Question:

The following processes are being scheduled using a preemptive, round robin & Priority scheduling algorithm. Each process is assigned a numerical priority, with a higher number indicating a higher relative priority. In addition to the processes listed below, the system also has an idle task (which consumes no CPU resources and is identified as Pidle). This task has priority 0 and is scheduled whenever the system has no other available processes to run. The length of a time quantum is 10 units. If a process is preempted by a higher-priority process, the preempted process is placed at the end of the queue.

Thread	Priority	Burst	Arrival
P_1	40	20	0
P_2	30	25	25
P_3	30	25	30
P_4	35	15	60
P_5	5	10	100
P_6	10	10	105

Tasks

a) Show the scheduling order of the processes using a **Gantt chart** for the **Round Robin (preemptive)** scheduling algorithm.

b) Calculate the **turnaround time** for each process.

c) Calculate the **waiting time** for each process.

d) Repeat parts (a)–(c) using the **Priority Scheduling (preemptive)** algorithm.

e) Compare the **average turnaround time** and **average waiting time** for both algorithms and briefly discuss which performs better for this set of processes.