GATE 2005

We wish to schedule three processes P1, P2 and P3 on a uniprocessor system. The priorities, CPU time requirements and arrival times of the processes are as shown below.

Process	Priority	CPU Time Required	Arrival Time (hh : mm : ss)
P1	10 (highest)	20 sec	00:00:05
P2	9	10 sec	00:00:03
P3	8 (lowest)	15 sec	00:00:00

We have a choice of preemptive or nonpreemptive scheduling. In preemptive scheduling, a late-arriving higher priority process can preempt a currently running process with lower priority. In non-preemptive scheduling, a latearriving higher priority process must wait for the currently executing process to complete before it can be scheduled on the processor. What are the turnaround times (time from arrival tili completion) of P2 using preemptive and nonpreemptive scheduling respectively?

(a) 30 sec, 30 sec

(b) 30 sec, 10 sec

(c) 42 sec, 42 sec

(d) 30 sec, 42 sec

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