CSE321: Operating Systems
Quiz-3

Name: _____ ID: _____ Section: ____

In a system, following conditions are present.

- There are 3 processes: P1, P2 and P3.
- Initialization value of the mutex lock, available=true.
- Ready queue is in the following order, [P1, P3, P2].
- CPU allocation is managed by round robin scheduling algorithm with the time quantum of 10 ms.
- Each statement takes 5 ms to execute.
- Critical section contains 4 statements.
- Remainder section contains 3 statements.

The structure of process P_i in solution using mutex lock:

```
acquire(){
   while(!available)
     ;//busy wait
   available=false;
}

release(){
   available=true;
}
```

```
do{
   acquire();
   //critical section
   release();
   //remainder section
}while(true);
```

Complete the table given below for processes P1, P2 and P3 using mutex lock.

Process 1	Process 2	Process 3
While (!av) av=false		
		While (!av) Busy wait
	While (!av) Busy wait	
Cs1 cs2		
		Busy wait

	Busy wait	
Cs3 Cs4		
		Busy wait
	Busy wait	
av=true rs1		
		While (!av) av=false
	Busy wait	
Rs2 rs3		
		Cs1 cs2
	Busy wait	
		Cs3 Cs4
	Busy wait	
		av=true rs1
	While (!av) av=false	
		Rs2 rs3
	Cs1 Cs2 Cs3	

	Cs4 av=true Rs1 rs2	