



EAST WEST UNIVERSITY BANGLADESH
Department of Computer Science & Engineering

CSE325: Operating System (1, 2)

Term II Examination

Fall 2015

Total Marks: 30

Instructor: Dr. Md. Shamim Akhter

Time: 90 minutes

1. **Interrupt disabling** and enabling is a common approach to implementing mutual exclusion, what are its advantages and disadvantages? (4)
2. What is the meaning of the term **busy waiting**? What other kinds of waiting are there in an operating system? Can busy waiting be avoided? Explain your answer. (4)
3. What is **priority inversion**? How could it happen? How can it be overcome? (4)
4. By “**Multilevel Queue Fixed priority**” scheduling algorithm, draw the CPU scheduling Gantt chart and complete the table for the following given processes information. (10)

	Queue Name	Process	Burst Time	Arrival Time	Algorithm
Higher Priority	1 st Foreground	P1	50	0.0	RR interval: 20 Preemptive
		P2	15	30.0	
		P3	45	30.0	
	2 nd Foreground	P4	40	0.0	SRTF Preemptive
		P5	10	10.0	
Lower Priority	Background	P6	30	60	FCFS Non-preemptive
		P7	20	130	

	P1	P2	P3	P4	P5	P6	P7
Waiting time							
Turnaround time							

5. **Atomic** (without interruption) **wait and signal** are not sufficient to hold mutual exclusion at multiprocessor environment. Explain the solution for such conditions. (4)
6. What are the differences between **user-level threads** and **kernel-level threads**? Under what circumstances is one type better than the other? (4)