

CSI 4337
50 min.

Exam #1

Sept. 21, 2005
ECS 104

Name _____

All questions are worth 10 points. Maximum score: 80

1. When your program is running, what is the operating system doing?

2. The following two statements are executed, once, by two different processes simultaneously. What are the possible final results, and how do they occur? The original value of S is 5.

P1:

P2:

$S = S + 7;$

$S = S - 3;$

3. Give a solution to the bounded buffer problem. Show sender, receiver, and the required shared variables.

4. Given the following processes with burst times and arrival times, show the Gantt chart for the two algorithms, Shortest Remaining Time First, and First Come First Served.

Process	Burst Time	Arrival Time
P1	9	0
P2	2	2
P3	8	4
P4	6	5
P5	5	12

5. The following five processes arrive at time zero in the order given. For these processes, compute a) the average wait time, b) the average response time and c) the average turn-around time, for the three algorithms Shortest Job First, First Come First Served, and Round Robin with a quantum of 4.

Process	Burst Time
P1	1
P2	7
P3	9
P4	3
P5	6

6. What is a context switch? Give the steps that must take place during a context switch.

7. What is the idle process and why is it needed?