

Name: _____ (First name first)

Score: _____

COSC 6360

QUIZ #3

OCTOBER 26, 2009

Closed book. You can have with you one single-sided 8½ by 11 sheet of notes.

1. When will the following CSP program terminate? (2x10 points)

```
ch : char; count : integer; count := 0;
*[count < 501; one ? ch → two ! ch];
```

a) When process one terminates. _____

b) When count becomes ≥ 501. _____

2. Consider a **two-ring** Totem system comprising rings A and B. Assuming that a given processor has received messages with the following timestamps from each ring:

Rings	Messages
A	m(2h15), m(2h23)
B	m(2h10), m(2h25), m(2h30)

Which messages will be delivered by the processor if all messages are **agreed delivery messages**? (2x10 points and no partial credit)

The processor will deliver messages __ m(2h15), m(2h23) _____ from ring A and messages __ m(2h10) _____ from ring B.

3. How does BitTorrent enforce **fairness**? (20 points)

Peers penalizes peers that do not send them enough data by "choking" them, that is, refusing to upload data to them for ten seconds.

4. How does Kerberos implement password changes? (20 points)

Whenever there are more than one Kerberos servers, one of them can accept key change requests (primary server). To propagate these changes to the other servers, the primary server periodically sends to them an encrypted version of its current key list.

This means that users cannot change their passwords when the primary server is down: changing passwords is not a critical task.)

5. Under the best possible circumstances how many read operations can be executed in parallel

a) By a RAID level 3 array with six disks? (10 points) **Answer:** __ one __

b) By a RAID level 5 array with the same number of disks? (10 points) **Answer:** __ six __

Explanation: In a RAID level 3 each read operation involves all the disks in the array.