CPSC 851 Quiz #1
Fall 2016

Please work on your own. You can use any resources you like for this quiz (books, the Internet), but do not talk to anyone about the quiz.

1 Copy and paste the following simple "C" program into a file called quiz1.c. Answer the questions. You should code the solution in quiz1.c. You can copy and paste the output of your quiz1.c into this document for your solution. Please submit quiz1.c in handin along with the solutions to your quiz. Please copy and paste your answers from a working code "C" file below. Your quiz1.c should compile on a department Ubuntu machine (like imp2) with a 'gcc quiz1.c'. When we run 'a.out', we should see the printf results that we

Include the results of the executable (from the printf) in your answer below. Submit with your quiz1 solution the program in a file called quiz1.c

```
#include "stdio.h"

void main (void)
{
char a[4] ="0123";
char *Ptr1 = a;

//Quesstion 1 : what gets printed?
printf("\nquiz1: a[0]:%c,  a[0]:%x, *Ptr1:%c *Ptr2:%c \n",a[0], a[0],*Ptr1++,*(Ptr1+1));


//Question 2:  write "C" code that will swap the byte order of the variable myIPAddress
//   Hint:  an TCP/IP V4 IP address is 4 octets.  It is sent over the wire in network
//          byte order which is defined by TCP/IP to be big endian.
//          An Intel PC machine is little endian.


//Question 3 After the swap, what gets printed?
printf("\nquiz1: step 1: a[0]:%c,  a[0]:%x, a[0]:%d, myIPAddress:%x \n",a[0],
a[0],a[0],anIPAddress);

}
```

Question 2 Based on the CPSC851 syllabus, where is my office?

Question 3 Based on the CPSC 851 syllabus, what is the overall contribution (grade weight) for quizes in this class?

Question 4

Question 5

Question 6

Question 7

Question 4 : define the term 'Error Detection' in a general networking context.

Question 5: Identify specific examples of 'Error Detection' at the Physical, Link, Network, and Transport layers that exist in a network that is based on a OSI layered model (such as TCP/IP).

Question 6 and 7

Host 1 -------- 10 Mbps --------- Router ---------100 Mbps -------- Host 2
Prop delay:4ms prop delay 10 ms

In the above network, Host 1 sends data as fast as the network allows to Host 2. There are two hops, the first has a link capacity of 10 Mbps and the second a link capacity of 100Mbps. The propagation delays of the links are 4 ms and 10 ms respectively.

Question 6 In the bestconditions (no loss, no competing traffic), what is the application throughput achieved between Host 1 and Host 2 ?

Question 7 Consider one 1500 byte packet sent by Host 1 to Host2. Assume the packet experiences no queueing delay or processing delays. How much time will it take that packet to be sent on Host 1's first hop until it is completely received by Host 2?