ITS323 − Quiz 1

Name: _____   ID: _____   Marks: _____ (10)

Question 1   [4 marks]

Consider the TCP/IP protocol architecture.

(a) Windows Live Messenger, used for instant messaging or online chat, uses the MSN Messenger protocol. What layer is it implemented at?

(b) Which layer are IP addresses part of?

(c) Which layer includes the task of reliably delivery of data between application processes?

(d) What type of network is used for communications inside a campus or office building?

Question 2   [3 marks]

You have paid for a 6Mb/s link from your office to the ISP. When transferring a large file to one of the servers in the ISP's network your application reports a download rate of 4Mb/s. The application segmented the file into segments of 800B each.

(a) How many bits are transmitted by the server for each segment? Assume no errors or other non-data packets are need. [2 marks]

(b) Assuming you cannot change the amount of overhead per packet, and you cannot afford to get a higher speed link, what could be done to increase the efficiency? [1 mark]

Question 3   [3 marks]

Computer A is connected to computer B via a 3km, 1Mb/s link. Computer B is also connected to computer C via a 6km, 1Mb/s link. The processing delay for a packet at each computer is 100μs. There is no queuing delay. Every packet transmitted contains 125B.

(a) What is the propagation delay across the link from A to B? [1 mark]

(b) What is the transmission delay across the link from B to C? [1 mark]

(c) What is the total delay to send a packet from A to C? [1 mark]