ITS413 – Quiz 5

Name: _____

ID: _____ Mark: _____ (out of 10)

Question 1 [2 marks]

A Voice over IP application samples the input voice signal at a frequency of 12kHz, with each sample represented by 8 bits.

a) At what rate, in bits per second, is the voice data generated at? [0.5 mark]

Consider the overhead of VoIP. Assume the VoIP application generates packets that each contain 40 Bytes of voice data. Each packet has an additional 20 byte IP header, and 8 bytes of UDP header and 12 byte RTP header.

b) What network throughput is required to deliver the voice data to the destination at the same rate at which it is generated at the source? [1.5 marks]

Question 2 [6 marks]

Fill in the blank spaces (1 mark each)
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a) Video applications can tolerate some _____, whereas web browsing applications cannot.

b) A IP voice call (such as using Skype) is an example of _____ communications, whereas Youtube is an example of _____ communications.

c) _____ are often used to reduce the effects of network jitter in streaming applications.

d) In RTP, _____ can be used to convert from one data rate to another during a multimedia session.

e) A common signaling protocol used in IP networks is _____ .

f) For an IPTV access network, _____ is better than _____ because it delivers optical fibre closer to the user's home.

Question 3 [2 marks]

Consider IP multicast versus using unicast to emulate a multicast network.

a) Explain an advantage of multicast.

b) Explain an advantage of using unicast to emulate a multicast network.