

ITS 323 – QUIZ 1 (CS)

First name: _____ Last name: _____

ID: _____

Total Marks: _____

out of 10

Question 1 [2 marks]

Name the four different types of addresses used in the Internet layered model, and for each address type, give the layer at which it is used.

Address Type 1: _____ Used at layer: _____

Question 2 [2.5 marks]

True or false (circle the correct answer, T or F):

- a) Interactive voice traffic (e.g. a voice call over the Internet) generally requires a small and constant delay.

T / F

- b) A web browser, such as Firefox or Internet Explorer, would normally implement an entire TCP/IP stack (all layers).

T / F

- c) A PC or laptop computer may have one or more physical interfaces (e.g. a wired Ethernet interface and a wireless LAN interface). An Internet router will normally have only one interface.

T / F

- d) The Internet layered model includes the Network layer, Transport layer and Session layer.

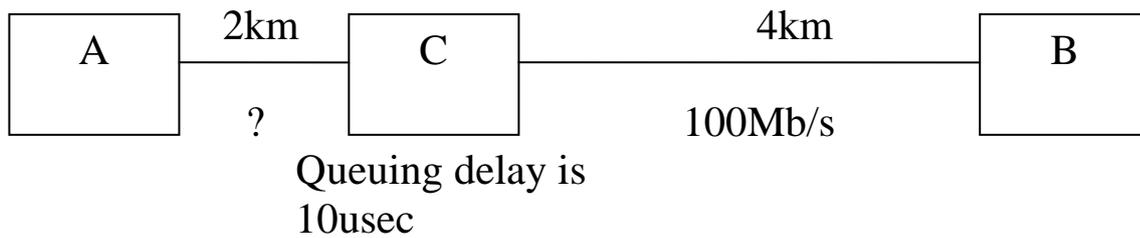
T / F

- e) Most of the important protocols used in the Internet (e.g. TCP and IP) were developed by the International Organisation for Standardisation (ISO).

T / F

Question 3 [3.5 marks]

Consider the network shown below in which two cable links are used to connect A to B (via C).



If a message of size 1000 bits has to be sent from A to B with a maximum delay of 150μsec, then what is the minimum data rate is required over the first link?

You can assume the transmission velocity is 2×10^8 m/s for each cable. Also assume there are no processing delays at any node, and no queuing delay at nodes A or B.

Question 4 [2 marks]

In the Question above, if node A adds 100 bits of header to the message, and node C adds another 50 bits of header to the message it receives, then what is the throughput of the original message if the maximum delay (150μsec) is experienced?