ITS 323 – QUIZ 4 (ITA) ANSWERS

First name: _____ Last name: _____

ID: _____ Total Marks: _____

out of 10

Question 1 [6 marks]

True or False:

a) Statistical Time Division Multiplexing allocates time slots to users in a fixed order. T / F

b) ADSL uses Frequency Division Multiplexing to combine voice and data traffic on a telephone line. T / F

c) Frame Relay and the Internet Protocol both use virtual circuit packet switching. T / F

d) Circuit switching networks are no longer in use today. T / F

e) Datagram packet switching requires a header to be added to each packet; virtual circuit packet switching *does not* add a header to each packet. T / F

f) An example of fairness in a routing algorithm is the algorithm reacting to congestion (overload) in the network and selecting new paths to reduce the load T / F

Answers

False – Statistical TDM allows users to be allocated time slots on demand, not in a fixed order

True – ADSL gives one frequency for voice, one for data upload and one for data download

False – Although Frame Relay uses virtual circuit packet switching, IP does not (it uses datagram packet switching).

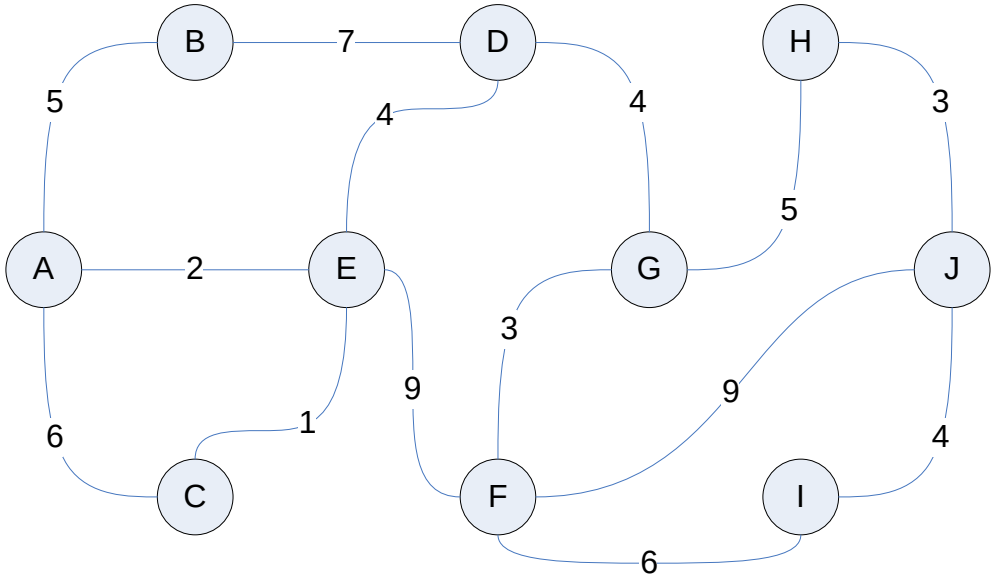
False – Telephone networks still use circuit switching (in widespread use)

False – Both packet switching techniques add a header to each packet so the packet switches can identify where to send the packet

False – Fairness is related to giving all users equal treatment; the example presented is related to robustness

Question 2 [4 marks]

Consider the network below. For each link, the delay, in milliseconds, is shown. Assume the links are bi-directional, and the costs are identical in both directions.



a) What is the least cost path from A to J if the metric is number of hops?

Path: _____

b) What is the least cost path from A to J if the metric is delay?

Path: _____

Answer

a. From A to J, the minimum number of hops is 3: path A – E – F - J

b. The minimum delay is 18milliseconds, A – E – D – G – H - J