ITS 323 – QUIZ 4 (ITB) ANSWERS

First name: _____ Last name: _____

ID: _____ Total Marks: _____
out of 10

Question 1 [6 marks]

True or False:

a) PDH, SDH and SONET are network technologies that use Synchronous Time Division Multiplexing T / F

b) Frequency Division Multiplexing allows multiple users to use a single transmission link by allocating separate time slots to users. T / F

c) X.25 and Frame Relay standardise transport layer protocols. T / F

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

e) Circuit switching requires a connection setup delay; virtual circuit packet switching does not require a connection setup delay. 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

True – All three use TDM

False – FDM allocates separate frequencies to each user, not time slots

False – X.25 and Frame Relay concentrate on the Physical and Data Link layer (X.25 also Network layer) – neither include protocols for Transport layer

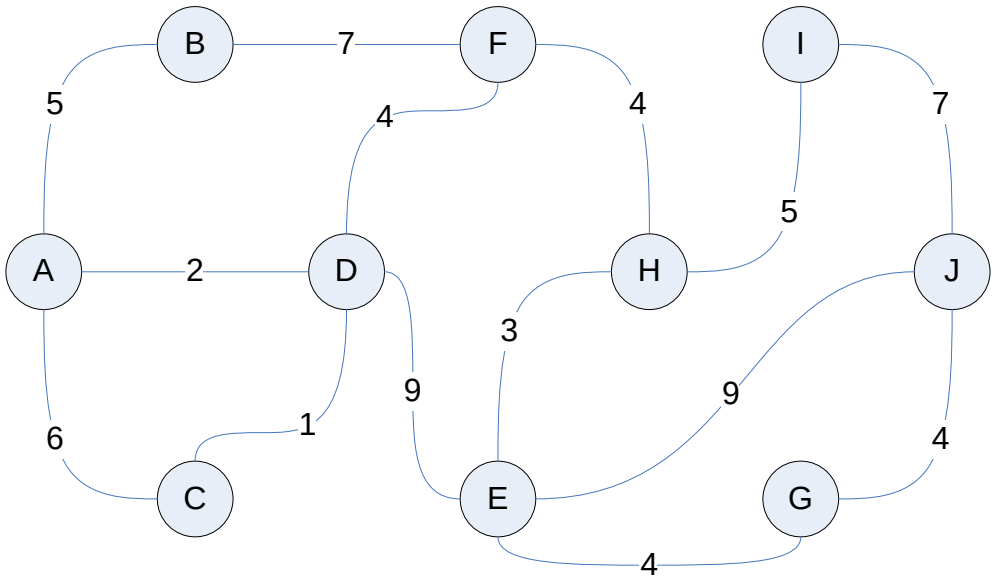
False - Telephone networks still use circuit switching (in widespread use)

False – Both circuit switching and virtual circuit packet switching include a connection setup delay at the start.

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

Question 2 [2 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 – D – E - J

b. The minimum delay is 19millisends, A – D – E – G - J