ITS 323 – QUIZ 4(2)

First name: _____ Last name: _____

ID: _____ Total Marks: _____
out of 10

Question 1 [4 marks]

a) Queuing delay in packet switches does not depend on the arrival rate of packets at a switch.

True False

b) In a virtual circuit packet switching network, the source and destination must transmit/receive at the same speed (or data rate).

True False

c) In routing, increasing the amount of information about the network that is available to nodes, will decrease the overheads introduced into the network by routing protocols.

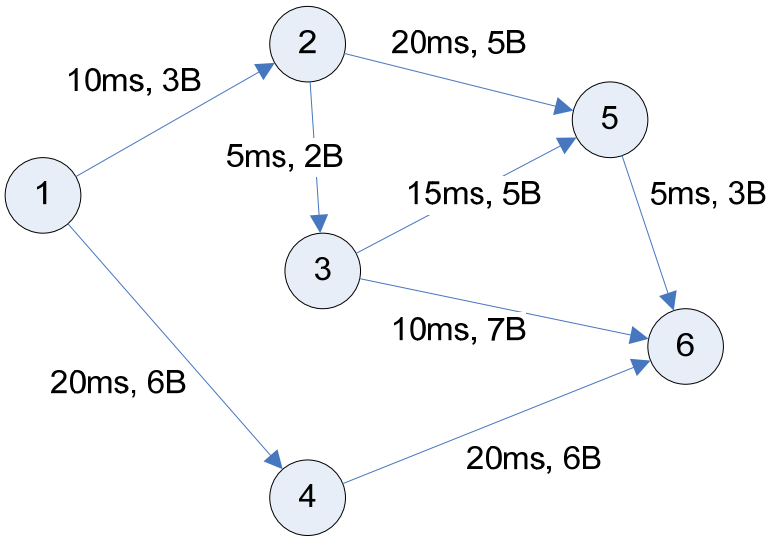
True False

d) With datagram packet switching, increasing the packet size will result in shorter delays because of the reduced overhead of headers

True False

Question 2 [2 marks]

Consider the network below.



The delay (in milliseconds) and price (in Baht per MB) of each simplex link is shown. If a routing algorithm chose a path from 1 to 6 to be 1 – 4 – 6 then what metric was used by the least cost routing algorithm (select no more than one answer):

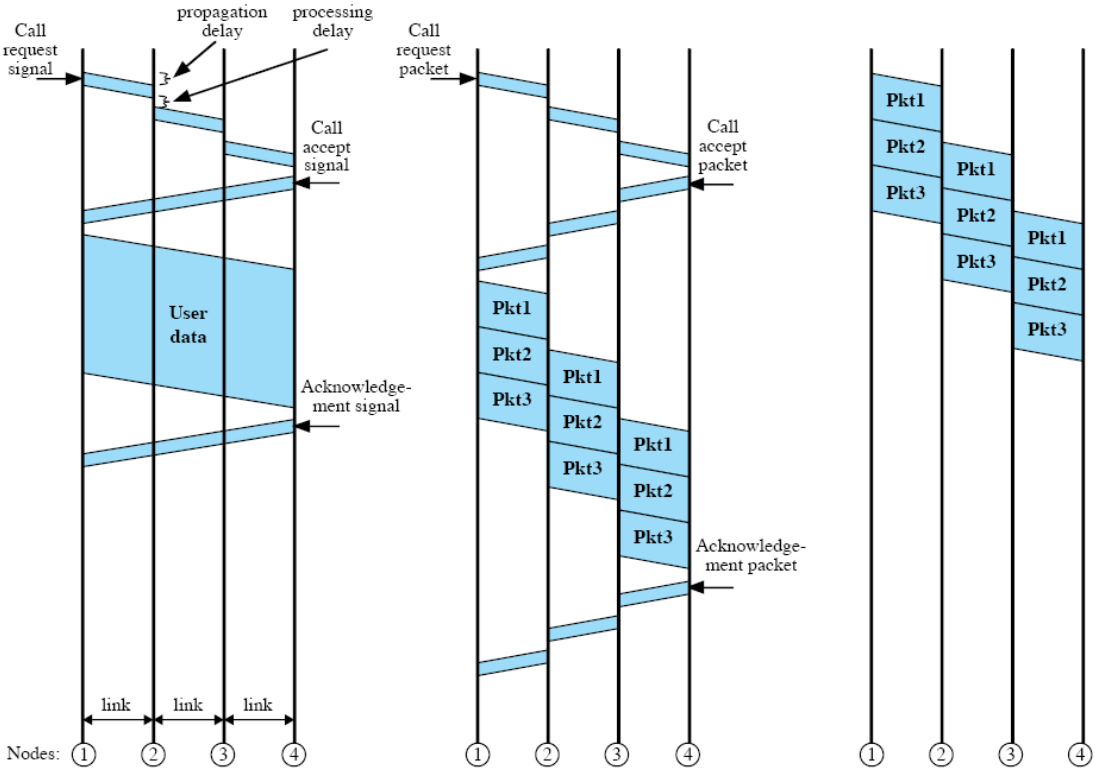
i. Hops

ii. Delay

iii. Price

Question 3 [4 marks]

Compare the delay in sending data using Circuit Switching versus Datagram Packet Switching as shown below.



You may assume:

- Number of links, **L** = 4
- Packet Switching:
  - Entire packet consists of Header and Data
  - Header transmission time, **H** = 1ms
  - Data transmission time, **D** = 10ms
  - Number of packets is **P** = 10
- Circuit Switching:
  - Time between sending call request signal until receiving call accept signal is **C** = 40ms.
  - Time between sending and receiving the call acknowledgment is **A** = 20ms.
- All other processing, propagation and queuing delays are 0.

a) What is the total delay for Datagram Packet Switching? [2 marks]

b) What is the total delay for Circuit Switching (assuming same amount of data to be sent as in Datagram Packet Switching above)? [2 marks]