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CS610-Computer Networks
MID FALL 2007

a. Explain how the CSMA/CD protocol answers the following questions: (Marks: 08)

i. When should the station access the medium?
ii. What should be done if the medium is busy?
iii. How should the station determine the success or failure of the transmission?
iv. What should the station do if there is an access conflict?

b. Imagine the length of a 10Base5 cable is 2500 m. If the speed of propagation in a thick coaxial cable is 400,000,000 m/s, how long does it take for a bit to travel from the beginning to the end of the network? Ignore any propagation delay in the equipment. (Marks: 06)

Ethernet uses a _____ static addressing scheme in which each device is assigned a unique address by the manufacturer.

64
48
32
8

Consider the six computers connected to a pair of bridged LAN segments as shown below: (Marks:14)

Fill the segments list as given below according to the events occurs (How a bridge can learn the locations of computers when a sequence of events occurs).

Event	Segment 1 List	Segment 2 List

Bridge boots
A sends to B
B sends to A
F broadcast
E sends to B
E sends to D
D sends to C
C sends to F

a. Answer the following question: (Marks: 08)

i. What are the main reasons for which PING command is not used for probing in the large network?
ii. What is a ring network technology that is designed to overcome severe failure, explain its working briefly?
iii. What is difference byte stuffing and bit stuffing?

b. What is the ratio of useful data to the entire packet for the smallest Ethernet frame? What is the ratio for the largest frame? What is the average ratio?(Marks: 06)

An interface for twisted pair Ethernet must have a _____ connector, and must generate signals according to the_____ specification.
BNC- t base 10
Rj 45- t base 10
BNC-t base 5
Rj 45-t base 2

A bridge uses the _____ to determine which computers connect to which segment, and uses the _____ to determine whether to forward a copy of frame.
Source , destination
Source , source
Destination, source
None from above

A system with redundant bridges might have a problem with_____ in the system.
Loop
Filters
Spamming
All above