Tutorial 13

Question 1

A token-ring LAN interconnects M stations using a star topology. All the input and output lines of the station interfaces are connected to a cabinet where the actual ring is placed. The distance between each station to the cabinet is 100 m. The ring latency per station is 8 bits. The frame size is 1,250 bytes. The ring speed is 25 Mbps. Propagation speed is 2 x 10^8 m/sec

(a) What is the maximum possible arrival rate that can be supported if stations are allowed to transmit an unlimited number of frames/token?

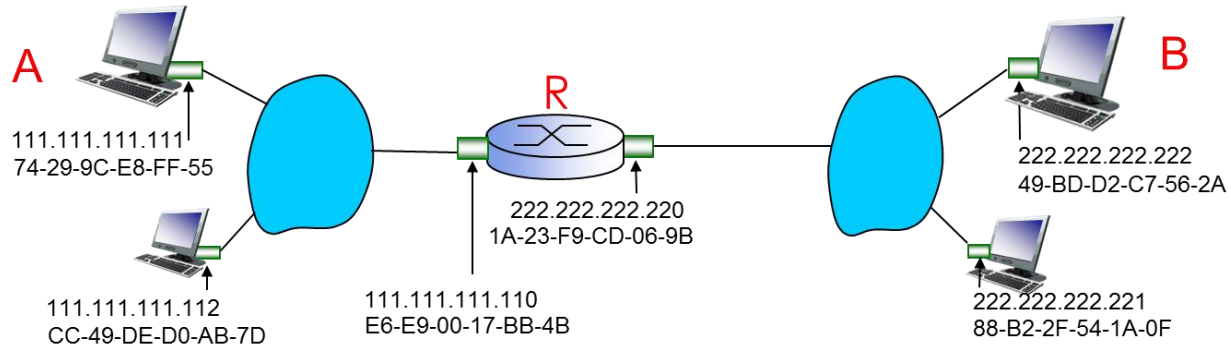
(b) What is the maximum possible arrival rate that can be supported if stations are allowed to transmit 1 frame/token using multi-token operation?

Question 2

Why is an ARP query sent within a broadcast frame? Why is an ARP response sent within a unicast frame?

Question 3

Consider two LANs interconnected by router R.



(a) Show the ARP tables of router R.

(b) Host B would like to send an IP datagram to host A. What are the source and destination IP and MAC addresses in the datagram?