|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Source  Layer 2 | Destination  Layer 2 | Source  Layer 3 | Destination  Layer 3 |
| PC0 to Router0 | 00E0.8F67.8 | 0040.0B00.5C01 | 192.168.1.10 | 192.168.4.10 |
| Router0 to Router1 | HDLC:ONE address  0x8f |  | 192.168.1.10 | 192.168.4.10 |
| Router1 to Router2 | 0x8f |  | 192.168.1.10 | 192.168.4.10 |
| Router2 to PC1 | 0001.427A.1 | 0007.EC76.BE83 | 192.168.1.10 | 192.168.4.10 |
| PC1 to Router2 | 0007.EC76.B | 0001.427A.1401 | 192.168.4.10 | 192.168.1.10 |
| Router2 to Router1 | 0x8f |  | 192.168.4.10 | 192.168.1.10 |
| Router1 to Router0 | 0x8f |  | 192.168.4.10 | 192.168.1.10 |
| Router0 to PC0 | 0040.0B00.5C | 00E0.8F67.87A6 | 192.168.4.10 | 192.168.1.10 |

QUESTION 2: As a message send from layer 2 to layer 3 I observed the source address and mac address of Layer 2 are changing. The Ethernet and hdlc address is changing because it is changing the frame when it passes through the wire.

While the source address and IP destination address at Layer 3 are the same. Because data Link is the same Because the Ethernet are throwing the frame away while the pcs are keeping the datalink

Question3 :

EtherType is used to indicate which protocol is encapsulated in the payload of the **frame**. The same **field** is also used to indicate the size of some **Ethernet frames**.

* The EtherType field is two octets long
* 7,1,6,6,4,2,46-1500,4,12 in octets
* It indicate the maximum size allowed for header to take.

Q4

Identifies the transport-layer protocol which will interpret the Data section. This will typically be TCP or UDP but other values are possible. Protocols are identified by a unique number as listed in an online database

* 0,4,8,12,16,20,24,28 in bits

Option + padding 0-32 bits word

* it indicate maximum permitted size

q6.

When a network device sends a message, the message will take the form of a packet. Each OSI (open system interconnection) model layer adds a header to the packet. The packet is then covered with some information directing it onward to a destination; this is analogous to the address on a letter in which the actual message is carried inside the envelope. Similarly, the message in the packet is encapsulated with some information such as the address of next node, protocol information, the type of data and the source and destination addresses.