Tutorial 4: Data Link Layer (OSI Model)

Q1. (a) Give a term that related to upper sublayer of layer two and briefly describe that term.(3 marks)

(b) The following figure shows a frame of data link layer.

Figure 1: A structure of a frame

(i) Identify a header of a frame that labeled as "A" from Figure 1 and state the function of that flag. (2 marks)

(ii) Based on Figure 1, identify a frame trailer that had indicated as "B". List a role of that flag. (2 marks)

(c) Protocol Data Unit (PDU) of a message in Data Link Layer is called frame. A frame consists of three portions. There are referred to header, data and trailer.

(i) Identify a sublayer of Data Link Layer that defines the media access processes performed by the hardware. (1 mark)

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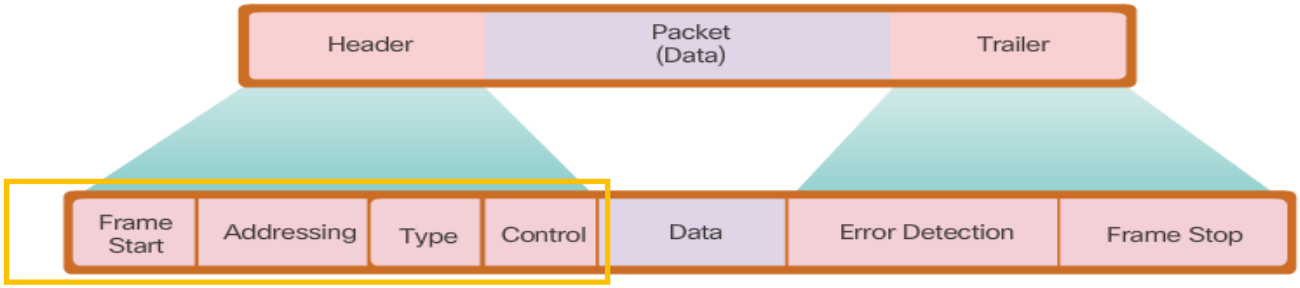
(ii) Identify and briefly describe **TWO (2)** fields that related to the header of a frame. (6 marks)



(iii) What is the purpose of stop frame that located at the trailer of a frame? (2 marks)

Q2. The Figure 2 shows a network topology on how computers can communicate across LAN and WAN via different types of physical media and Layer 2 protocols. Answer the following question based on the Figure 2.

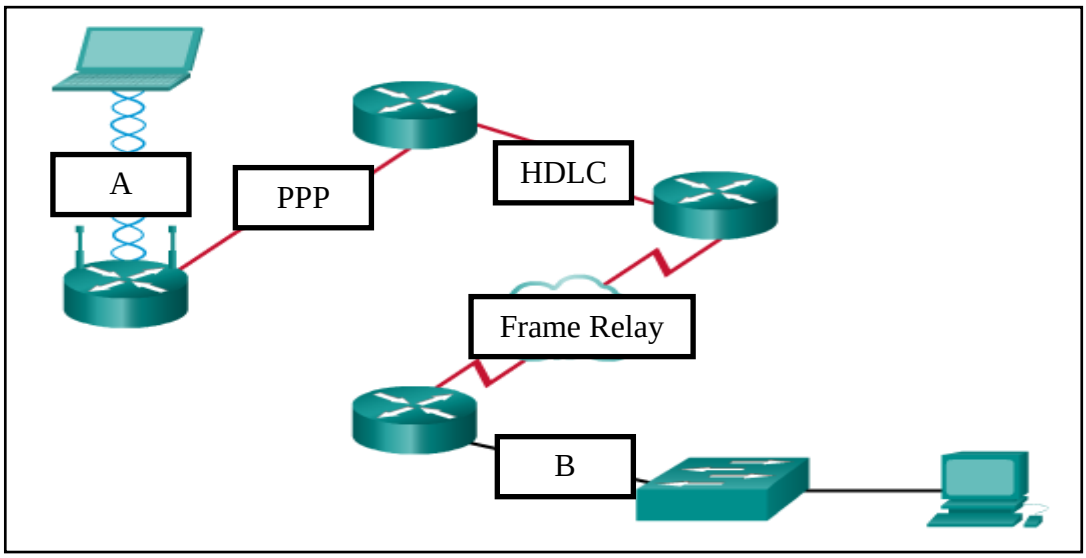


Figure 2

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(i) "A" and "B" are two different popular network connection methods for LAN. Identify the type of connecting media and the IEEE Networking Standard of LAN "A" and "B" respectively. (4 marks)

Label	Connecting media	IEEE Networking Standard

(ii) There are two types of access method in LAN topology. Which access method is used for both "A" and "B"? (1 mark)

(b) If the data link layer didn't exist, what changes would be required of a network layer protocol such as Internet Protocol (IP)? (6 marks)