The OSI Model and the TCP/IP Protocol Suite

Exercises

1. The International Standards Organization (ISO) is a multinational body dedicated to worldwide agreement on international standards. An ISO standard that covers all aspects of network communications is the Open Systems Interconnection (OSI) model.

3.

   a. Transport layer

   b. Network layer

   c. Data link layer

   d. Application layer

   e. Physical layer

5.

   a. Presentation layer

   b. Session layer

   c. Data link and transport layers

   d. Session layer

   e. Presentation layer

7. If we think about the switch as a passive one (not a bridge), Figure 2.E7 shows the solution.

Figure 2.E7 *Solution to Exercise 7*
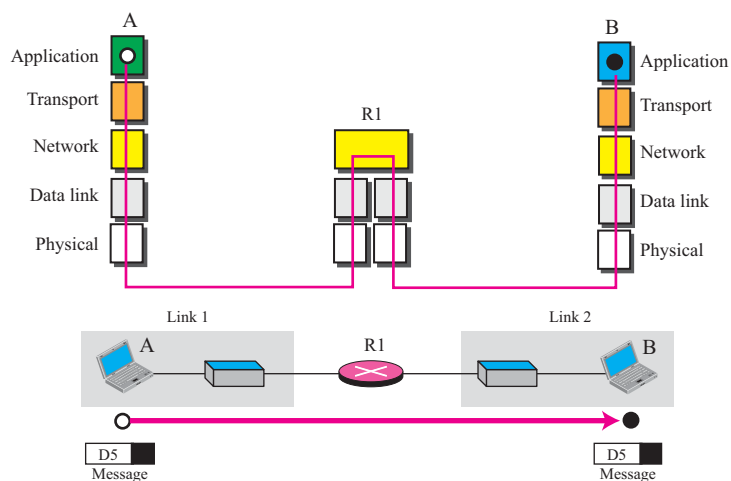
9. The header at the transport layer should at least include the source and destination port number. This means the size of the header is at least $2 + 2 = 4$ bytes.

11. The header at the data link layer should at least include the physical source and destination addresses. This means the size of the header is at least $6 + 6 = 12$ bytes.

13. At the physical layer, the signal representing the bit stream is broadcast to all stations in a network. Every station receives it; there is no need for addresses in this layer.

15. The destination address is needed to define the recipient of the message; the source address is needed if the receiver of the message has to respond or the intermediate nodes has to report any error the source.