CHAPTER 2

Network Models

Review Questions

1. Physical, data link, network, transport, and application.
2. Physical, data link, and network layers.
3. Application layer.
4. The transport layer is responsible for process-to-process, whereas the network layer oversees host-to-host delivery of individual packets.
5. Peer-to-peer processes are processes on two or more devices communicating at a given layer
6. Each layer calls upon the services of the layer just below it using interfaces between each pair of adjacent layers.
7. Headers and trailers are control data added at the beginning and the end of each data unit at each layer of the sender and removed at the corresponding layers of the receiver. They provide source and destination addresses, synchronization points, information for error detection, etc.
8. The physical layer is responsible for transmitting a bit stream over a physical medium. It is concerned with
   a. physical characteristics of the media
   b. representation of bits
   c. type of encoding
   d. synchronization of bits
   e. transmission rate and mode
   f. the way devices are connected with each other and to the links
9. The data link layer is responsible for
   a. framing data bits
   b. providing the physical addresses of the sender/receiver
   c. data rate control
   d. detection and correction of damaged and lost frames

10. The network layer is concerned with delivery of a packet across multiple networks; therefore its responsibilities include
    a. providing host-to-host addressing
    b. routing
11. The transport layer oversees the process-to-process delivery of the entire message. It is responsible for
    a. dividing the message into manageable segments
    b. reassembling it at the destination,
    c. flow and error control
12. The physical address is the local address of a node; it is used by the data link layer to deliver data from one node to another within the same network. The logical address defines the sender and receiver at the network layer and is used to deliver messages across multiple networks. The port address (service-point) identifies the application process on the station.
13. The application layer services include, file transfer, remote access, shared database management, and mail services
14. The application, presentation, and session layers of the OSI model are represented by the application layer in the Internet model. The lowest four layers of OSI correspond to the Internet model layers.

Multiple-Choice Questions

15. b
16. b
17. a
18. d
19. b
20. a
21. c
22. a
23. b
24. a
25. d
26. c
27. b
28. d

Exercises

29.
    a. network layer
    b. transport, data link layers

    c. application layer, physical layer

    d. application layer and physical layer

    e. network layer

30.

    a. transport layer

    b. network layer

    c. network layer

    d. application layer

    e. physical layer

31.

    a. application layer

    b. data link, transport layers

    c. physical layer

    d. data link layer

    e. transport layer