CHAPTER 1

Introduction

Review Questions

1. Sender, receiver, medium, message, and protocol.
3. Performance, reliability, security.
5. Line configurations (or types of connections) are point-to-point and multipoint.
7. In half-duplex transmission, only one entity can communicate at a time; in a full-duplex transmission, both entities can communicate at the same time.
9.
   a. Mesh: n (n – 1) / 2
   b. Star: n
   c. Ring: n – 1
   d. Bus: one backbone and n drop lines
11. An *internet* is an interconnection of networks. The *Internet* is the name of a specific worldwide network
13. Standards are needed to create and maintain an open and competitive market for manufacturers, to coordinate protocol rules, and thus guarantee compatibility of data communication technologies.

Multiple-Choice Questions

15. c
17. c
19. c
21. a
23. a
25. c
27. c

Exercises

29.

a. If one connection fails, the other connections will still be working.

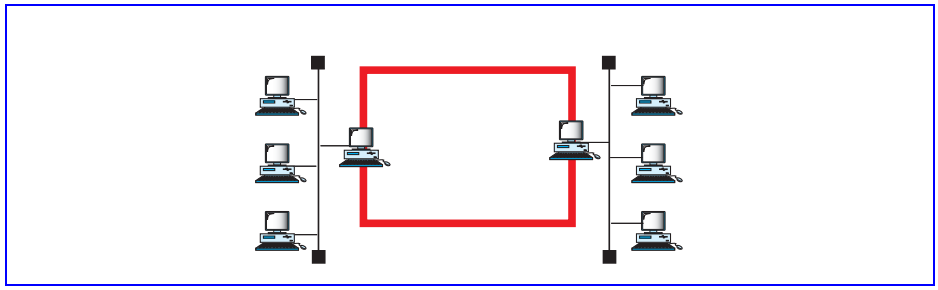
b. The other devices will still be able to send data through the hub; there will be no access to the device which has the failed connection to the hub.

c. All transmission stops.

d. The failed connection may disable the whole network unless it is a dual ring.

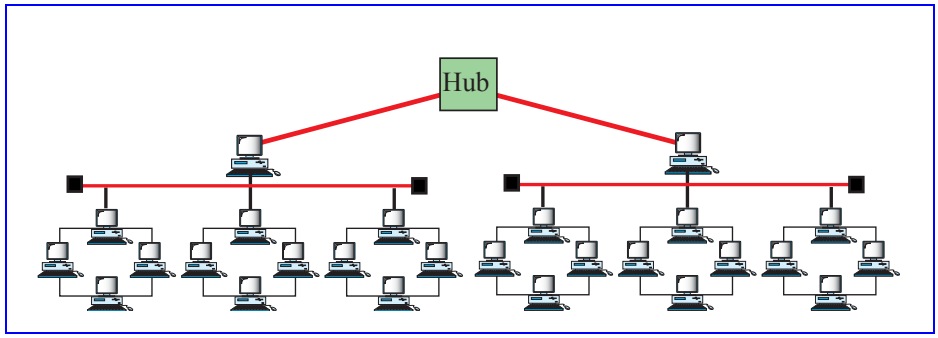
31. See Figure 1.1.

Figure 1.1 *Exercise 31*



33. See Figure 1.2.

Figure 1.2 *Exercise 33*



35.

a. V.32: Defines data transmission over phone lines

b. X.25: Defines transmission over public digital networks

c. I.430: Define physical layer specifications for an interface

37.

a. IEEE 802.3: CSMA/CD LAN

b. IEEE 802.4: Token Bus LAN

c. IEEE 802.5: Token Ring LAN

39.

a. Talking with a friend on the phone
b. Checking banking account information and making transactions on line