CHAPTER 1

Introduction

1.1   REVIEW QUESTIONS

1. Sender, receiver, medium, message, and protocol.

3. Performance, reliability, security.

5. A standards creation committee tests, evaluates, and standardizes new technologies. A forum concentrates on a particular new technology, trying to speed its development and acceptance. A forum can present its findings to a standards creation committee. A regulatory agency protects the public interest by regulating radio, TV, and wireless communications.

7. Number of users, transmission medium, type of hardware and software.

9. Unauthorized access and viruses.

11. In financial services, networks are used for storing and processing credit information, money transfer, and investment and exchange services.

13. Networks provide data exchange between users at different locations (e.g., voice-, text-, and videoconferencing).

15. A protocol defines what is communicated, in what way and when. This provides accurate and timely transfer of information between different devices in a network.

17. Syntax, semantics, and timing.

19. ITU-T develops standards for telecommunications.

21. The aim of IEEE is to advance theory and production and to develop standards in electrical engineering, electronics, and radio. In addition to standards development EIA promotes public awareness education and manufacturing concerns.

23. The FCC is a regulatory agency that regulates TV, radio, and phone communications.

1.2 MULTIPLE CHOICE QUESTIONS

25. b   27. d   29. b   31. b   33. a   35. d   37. a   39. c   41. b

1.3 EXERCISES

43. Products with nonstandardized parts: automobiles and printers. Products with standardized parts: flashlights and cameras.

45. Each employee can be identified at the entrance of the building by comparing his fingerprints or card with a database; special sensors and/or detectors can alarm the city police station or other security organization in case of a break in.

47.
   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

49.
   a. IEEE 802.3: CSMA/CD LAN
   b. IEEE 802.4: Token Bus LAN
   c. IEEE 802.5: Token Ring LAN

51.
   a. VESA - Video Electronics Standards Organization   - Milpitas, CA
   b. ETSI   - European Telecommunication Standards Institute

53. A fiber-optic cable provides a greater bandwidth for data transmission than a coaxial cable. This increases the data rate and the effectiveness of communication.

55. Dynamic routing software is more efficient than static routing table if there are frequent address changes.

57.
   a. Protecting hardware from theft
   b. Preventing pirating of software

58. Syntax (the sentence structure) is correct, semantics (the meaning of the sentence) are wrong.

59. Both syntax and semantics are correct.