

## Chapter06

### True/False

*Indicate whether the statement is true or false.*

- 1. The use of e-mail, IM, and voice mail has brought some secondary benefits to business communications by establishing a permanent written or electronic record of, and accountability for, ideas.
- 2. The major advantage of landline phones is that they are attached to people, not offices.
- 3. Radio frequency identification (RFID) technology enables us to conclude transactions and to make payments quickly.
- 4. Optical fiber technology is used in warehouses where employees can use handheld units to check a central system for availability and location of items to be picked up from and stored in shelves or bins.
- 5. When a line is capable of carrying multiple transmissions simultaneously, it is said to be broadband.
- 6. Coaxial cable connects to network devices with RJ-45 plug-in connectors, which resemble the RJ-11 connectors used on telephone wire, but are slightly larger.
- 7. Optical fibers can carry signals over relatively shorter distances compared to other media.
- 8. GEO satellites are placed in orbit 35,784 kilometers (about 22,282 miles) above earth.
- 9. There are two basic types of networks: LANs and MANs.
- 10. A peer-to-peer LAN is one in which no central device controls communications.
- 11. A switch is like a modem, except that it is less “intelligent.”
- 12. Internet relay is a high-speed packet-switching protocol used in WANs.
- 13. A computer connected directly to the Internet backbone—the highest speed communication channels—is called a host.
- 14. The process of associating a character-based name such as course.com with an IP address is called domain name resolution, and the domain name resolution service is DNS (Domain Name System).
- 15. IEEE 702.Fi is a family of wireless protocols, collectively known as Wi-Fi.
- 16. A direct link to a wireless router or AP creates a hotspot.
- 17. You will find a WLAN in almost every warehouse.
- 18. IEEE 802.16, Worldwide Interoperability for Microwave Access (WiMAX), increases the range and speed of wireless communication.

- \_\_\_ 19. Worldwide Interoperability for Microwave Access (WiMAX) functions similarly to cell phone communications, because it controls communication from stationary towers.
- \_\_\_ 20. Networking professionals often refer to generations of mobile communication technologies.
- \_\_\_ 21. DSL Internet links are provided by television cable firms.
- \_\_\_ 22. To provide DSL service, the telecommunications company connects your telephone line to a DSL bridge (often called a DSL modem).
- \_\_\_ 23. The bit rates of DSL lines usually have no relation to the distance of the subscriber's computer from the regional central office of the telephone company.
- \_\_\_ 24. MBWA is point-to-point transmission between two stationary devices, usually between two buildings, as opposed to mobile wireless, in which people carry a mobile device.
- \_\_\_ 25. Usually, utility companies partner with telecommunications companies to provide Broadband over Power Lines (BPL).

### Multiple Choice

*Identify the choice that best completes the statement or answers the question.*

- \_\_\_ 26. The Greek word tele, which means “\_\_\_,” is part of such words as “telephone,” “teleconference,” and other words referring to technologies that allow communications over large distances.
- |         |             |
|---------|-------------|
| a. far  | c. away     |
| b. path | d. distance |
- \_\_\_ 27. When a call is placed on a cellular phone, the signal is first transmitted to the closest \_\_\_\_, which sends a signal through landlines that dial the desired phone number.
- |               |                    |
|---------------|--------------------|
| a. transistor | c. transceiver     |
| b. cell band  | d. cell transistor |
- \_\_\_ 28. With cellular phone networks, if the receiving phone is also mobile, the call is communicated to the \_\_\_\_ closest to the destination phone.
- |                |                    |
|----------------|--------------------|
| a. transistor  | c. cell transistor |
| b. transceiver | d. cell band       |
- \_\_\_ 29. Businesses use \_\_\_\_ to save on travel costs and lodging, car fleets, and the time of highly salaried employees, whether they work in different organizations or at different sites of the same organization.
- |                      |                           |
|----------------------|---------------------------|
| a. videoconferencing | c. graphicsconferencing   |
| b. videocommuting    | d. graphic communications |
- \_\_\_ 30. When a communications medium can carry only one transmission at a time, it is known as \_\_\_\_.
- |              |              |
|--------------|--------------|
| a. broadband | c. baseband  |
| b. longwave  | d. shortwave |
- \_\_\_ 31. Dial-up connections through regular phone lines and Ethernet computer network connections are examples of \_\_\_\_.
- |              |              |
|--------------|--------------|
| a. wideband  | c. shortband |
| b. broadband | d. baseband  |

- \_\_\_ 32. \_\_\_ is a popular medium for connecting computers and networking devices because it is relatively flexible, reliable, and low cost.
- a. Coaxial cable
  - b. Twisted pair cable
  - c. Twinaxial cable
  - d. Optical fiber
- \_\_\_ 33. \_\_\_ are high-frequency radio waves that can carry signals over long distances with high accuracy.
- a. Microwaves
  - b. Shortwaves
  - c. Ultraviolet
  - d. Infrared
- \_\_\_ 34. The two major types of \_\_\_ are geostationary, also called GEO, and low earth orbit, also called LEO.
- a. microwaves
  - b. satellites
  - c. broadband
  - d. baseband
- \_\_\_ 35. \_\_\_ connect computers, printers, and other computer equipment for an office, several adjacent offices, an entire building or a campus.
- a. MANs (metropolitan area networks)
  - b. WANs (wide area networks)
  - c. LANs (local area networks)
  - d. PANs (personal area networks)
- \_\_\_ 36. \_\_\_ span a greater distance than LANs and usually have more complicated networking equipment for midrange communications.
- a. WANs (wide area networks)
  - b. MANs (metropolitan area networks)
  - c. peer-to-peer LANs
  - d. PANs (personal area networks)
- \_\_\_ 37. \_\_\_ fulfill organizational needs for reliable data communications while relieving the organization of the burden of providing its own network management and maintenance.
- a. WLANs
  - b. VANs
  - c. MANs
  - d. WANs
- \_\_\_ 38. LAN \_\_\_ have become a common device in offices and households.
- a. modems
  - b. cards
  - c. adapters
  - d. routers
- \_\_\_ 39. If you use a cable company to link to the Internet, the device connecting your computer's network card to the cable is called a \_\_\_.
- a. dial-up modem
  - b. cable modem
  - c. DSL modem
  - d. BPL modem
- \_\_\_ 40. A \_\_\_ is a group of bits transmitted together.
- a. switch
  - b. router
  - c. packet
  - d. modem
- \_\_\_ 41. The most important and pervasive set of protocols for telecommunications and networks today is called \_\_\_.
- a. SDLC
  - b. FTP
  - c. TCP/IP
  - d. NNTP
- \_\_\_ 42. \_\_\_ is known as a contention-based protocol, because devices on the network "contend" with other devices on the network for transmission time.
- a. Ethernet
  - b. Internet
  - c. Wi-Fi
  - d. IEEE 802.11
- \_\_\_ 43. \_\_\_ allow Internet access to anyone within range who uses a wireless-equipped device, provided logging in is not limited by controlled access codes.
- a. Hotspots
  - b. Hotpoints
  - c. APs
  - d. VPNs

- \_\_\_ 44. Named after a Scandinavian king who unified many tribes, the \_\_\_ standard was developed for devices that communicate with each other within a short range of up to 10 meters (33 feet) in the office, at home, and in motor vehicles.
- a. Wi-Fi
  - b. Bluetooth
  - c. WiMAX
  - d. MBWA
- \_\_\_ 45. The purpose of \_\_\_ is to provide mobile communication that is compatible with IP services.
- a. IrDA
  - b. MBWA
  - c. Bluetooth
  - d. WiMAX
- \_\_\_ 46. Each \_\_\_ of mobile communication technologies refers to a communication protocol or a combination of protocols.
- a. generation
  - b. packet
  - c. wave
  - d. network
- \_\_\_ 47. The differences among generations in mobile communications are mainly in capabilities and \_\_\_.
- a. transmission speed
  - b. flexibility
  - c. durability
  - d. stability
- \_\_\_ 48. The proliferation of high-speed connection services, also called \_\_\_, is mainly the result of businesses' and individuals' rush to the Internet.
- a. baseband services
  - b. Download services
  - c. broadband services
  - d. Upstream services
- \_\_\_ 49. With \_\_\_, data remains digital throughout the entire transmission.
- a. digital subscriber line (DSL)
  - b. dial-up line
  - c. twisted pair line
  - d. analog line
- \_\_\_ 50. \_\_\_ allows reception at a much faster rate than transmission, that is, it is faster downstream than upstream.
- a. Digital subscriber line (DSL)
  - b. Asymmetric DSL (ADSL)
  - c. Symmetric DSL (SDSL)
  - d. RADSL (Rate Adaptive DSL)
- \_\_\_ 51. A \_\_\_ line is made of 24 channels (groups of wires) of 64 Kbps each.
- a. T1
  - b. T2
  - c. T3
  - d. T4
- \_\_\_ 52. An alternative for households and small businesses that cannot obtain cable or DSL connections to the Internet is \_\_\_.
- a. twisted pair lines
  - b. T1 lines
  - c. T3 lines
  - d. fixed wireless
- \_\_\_ 53. The number next to a(n) \_\_\_ service refers to data speed in multiples of 51.84 Mbps, considered the base rate bandwidth.
- a. DS
  - b. OC
  - c. Wi-Fi
  - d. BPL
- \_\_\_ 54. Even if \_\_\_ service availability is to lag far behind cable and optical fiber in terms of subscribers and revenue, utility companies are likely to invest in the technology for their own use.
- a. dial-up
  - b. BPL
  - c. T1
  - d. DSL
- \_\_\_ 55. \_\_\_ is a standard for software that digitizes and compresses voice signals and transmits the bits via the Internet link.

- a. VoIP
- b. SoIP
- c. IRC
- d. TCP/IP

- \_\_\_ 56. Some experts see the future of telephony in a convergence of the cell phone and \_\_\_\_.
- a. VoIP phone
  - b. DSL phone
  - c. micro phone
  - d. satellite phone
- \_\_\_ 57. \_\_\_ can be very tiny, about the size of a rice grain, or several square inches, depending on the amount of information they need to contain and the environment in which they are used.
- a. IrDA cards
  - b. RFID tags
  - c. Bluetooth ports
  - d. Micro tags
- \_\_\_ 58. A portable digital music and video player can use \_\_\_ to communicate with your PC or another device (possibly another music/video player) to download files.
- a. T1
  - b. RFID
  - c. Wi-Fi
  - d. DSL

### Completion

*Complete each statement.*

59. \_\_\_\_\_, which is essential to smooth operations in today's business world, is the transmittal of data and information from one point to another.
60. Telephone, e-mail, the World Wide Web—none of these essential business services would be available without fast, reliable \_\_\_\_\_.
61. Once an organization connects its information systems to a public \_\_\_\_\_, security becomes a challenge.
62. Cellular phones derive their name from the territories of service providers, which are divided into areas known as \_\_\_\_\_.
63. People sitting in conference rooms thousands of miles apart are brought together by their transmitted images and speech in what is called \_\_\_\_\_.
64. One of the most interesting developments in worldwide telecommunications is \_\_\_\_\_ through the Internet: anyone with access to the Internet can download one of several free applications that help locate and download files from any online computer.
65. A communications \_\_\_\_\_ is the physical means that transports the signal, such as a copper wire telephone line, a television cable, or radio waves.
66. The \_\_\_\_\_ of a medium is the speed at which data is communicated, which is also called the transmission rate, or simply the bit rate.
67. \_\_\_\_\_ is sometimes called TV cable or simply "cable" because of its common use for cable television transmission.
68. Because light is not susceptible to EMI (electromagnetic interference) and \_\_\_\_\_, fiber optic communication is much less prone to error than twisted pair and radio transmission.

69. In the context of data communications, a(n) \_\_\_\_\_ is a combination of devices or nodes connected to each other through one communication channel.
70. A computer network within a building, or a campus of adjacent buildings, is called a(n) \_\_\_\_\_, or LAN.
71. In office LANs, one computer is often used as a central repository of programs and files that all connected computers can use; this computer is called a(n) \_\_\_\_\_.
72. A(n) \_\_\_\_\_ usually links multiple LANs within a large city or metropolitan region and typically spans a distance of up to 50 kilometers (about 30 miles).
73. Large \_\_\_\_\_ might have many constituent LANs and MANs on different continents.
74. VAN services cost much more than those offered by \_\_\_\_\_.
75. A(n) \_\_\_\_\_ is a wireless network designed for handheld and portable devices such as PDAs, cell phones, and tablet or laptop computers, and is intended for use by only one or two people.
76. Each computer or device connected to a network must have a(n) \_\_\_\_\_ or proper networking circuitry, which connects through a cable or a wireless antenna to a hub, switch, bridge, or router, which in turn connects to a LAN or WAN.
77. A(n) \_\_\_\_\_ with a modem is very slow (usually no faster than 56 Kbps), so most users and small businesses today are turning to faster connections that use digital signals throughout the connection, such as DSL and cable connections.
78. The “virtual” in \_\_\_\_\_ refers to the illusion that the user is accessing a private network directly, rather than through a public network.
79. In \_\_\_\_\_, a dedicated channel (a circuit) is established for the duration of the transmission.
80. In \_\_\_\_\_, a message is broken up into packets.
81. Communication on the Internet primarily follows the network protocol, \_\_\_\_\_, which is actually a set of related protocols.
82. IEEE 802.3, known as \_\_\_\_\_, is the only LAN protocol of significance.