

Network+ Guide to Networks, Seventh Edition

Chapter 5, Solutions

Review Questions

1. When an Ethernet NIC has been configured by the OS to use half-duplex, the transmit pair of the twisted-pair cable uses _____ transmissions, the receive pair in the cable uses _____ transmissions, and the twisted-pair cable uses _____ transmissions.

A. Simplex, half-duplex, half-duplex

B. Half-duplex, simplex, simplex

C. Simplex, simplex, half-duplex

D. Simplex, half-duplex, simplex

Answer: C. Simplex, simplex, half-duplex

2. Which of the following is *not* an example of a broadband transmission?

A. Cable TV

B. Telephone signal

C. Mobile voice

D. Ethernet

Answer: D. Ethernet

3. Which kind of multiplexing assigns slots to nodes according to priority and need?

A. WDM (wavelength division multiplexing)

- B. Statistical multiplexing
- C. TDM (time division multiplexing)
- D. CWDM (coarse wavelength division multiplexing)

Answer: B. Statistical multiplexing

4. Which type of transmission is measured by baud rate?

- A. Analog
- B. Digital
- C. Baseband
- D. Broadband

Answer: A. Analog

5. What kind of cable uses BNC connectors? F-connectors? Which connector is likely to be used by cable TV?

- A. Coaxial cable, coaxial cable, F-connector
- B. Coaxial cable, UTP, BNC connector
- C. STP, UTP, F-connector
- D. SMF, MMF, BNC connector

Answer: A. Coaxial cable, coaxial cable, F-connector

6. Which categories of twisted-pair cable can support Gigabit Ethernet?

- A. Cat 5 and lower
- B. Cat 5 and higher

- C. Cat 5e and higher
- D. Cat 6 and lower

Answer: C. Cat 5e and higher

7. What is the earliest twisted-pair cabling standard that meets the minimum requirements for 10GBase-T transmissions?
- A. Cat 5
 - B. Cat 5e
 - C. Cat 6
 - D. Cat 6a

Answer: C. Cat 6

8. Which type of cross-talk occurs between wire pairs near the source of a signal?
- A. Alien cross-talk
 - B. Tx/Rx reverse
 - C. FEXT
 - D. NEXT

Answer: D. NEXT

9. What device can boost an analog signal? A digital signal?
- A. Toner probe, multimeter
 - B. Repeater, certifier
 - C. Amplifier, repeater

D. TDR, multimeter

Answer: C. Amplifier, repeater

10. Which part of a toner and probe kit emits a tone when it detects electrical activity on a wire pair?

A. Probe

B. Tone generator

C. Toner probe

D. Toner

Answer: A. Probe

11. What are the four fundamental properties of an analog signal?

Answer: Amplitude, frequency, wavelength, and phase

12. What does a modem do?

Answer: A modem modulates digital signals into analog signals at the transmitting end, then demodulates analog signals into digital signals at the receiving end.

13. What is twist ratio and why is it important?

Answer: Twist ratio is the number of twists per meter or foot. The more twists per foot in a pair of wires, the more resistant the pair will be to cross-talk or noise.

14. What fiber is used in fiber-optic cabling to protect the inner core and prevent the cable from stretching?

Answer: Kevlar, a polymeric fiber

15. What characteristic of optical transmissions is primarily responsible for the distance limitations of fiber-optic cabling?

Answer: Optical loss, which is the degradation of the light signal after it travels a certain distance away from its source

16. Why is SMF more efficient over long distances than MMF?

Answer: The core of SMF is much narrower than that of MMF, and reflects very little. The light does not disperse as much along the fiber.

17. Why do APC ferrules create less back reflection than do UPC ferrules?

Answer: The end faces are placed at an angle to each other, so the reflection is sent back in a different direction than the source of the signal.

18. What does a fiber cleaver do?

Answer: It scores the fiber strand for breaking, but does not cut it.

19. How is latency measured and in what unit?

Answer: By calculating a packet's RTT, or the length of time it takes for a packet to go from sender to receiver, then back from receiver to sender. RTT is usually measured in milliseconds.

20. What is the difference between short circuits and open circuits?

Answer: A short circuit is one where connections exist in places they shouldn't, whereas an open circuit is one where needed connections are missing.