Computer Networks Practice

Use this key to check answers and read the explanations.

1. A school connects the computers and printer in one room so students can print from any desk. What type of network is the simplest description of this setup?

A. A local area network
B. A wide area network
C. A satellite navigation network
D. A cellular carrier network

Correct answer: A. A local area network
A local area network connects devices in a limited area, such as a room, building, or office.

2. A museum connects an exhibit computer to its local switch using a cable. Which name fits that kind of local connection?

A. Cellular data
B. Wi-Fi
C. Wired Ethernet
D. Satellite navigation

Correct answer: C. Wired Ethernet
Wired Ethernet carries data between devices over a physical link. Wi-Fi uses radio for the connection to its access point.

3. Which device is ordinarily used to connect several wired computers to one another on the same local network?

A. An external battery
B. A network switch
C. A graphics adapter
D. A barcode reader

Correct answer: B. A network switch
A network switch connects local devices so they can exchange data on the network.

4. Which device gives nearby laptops a wireless connection to the library’s existing network?

A. A projector screen
B. An Ethernet-only wall jack
C. A USB charging dock
D. A wireless access point

Correct answer: D. A wireless access point
An access point provides a radio link to nearby devices and connects that link to the local network.

5. Two links are advertised at 20 megabits per second and 80 megabits per second. What property is expressed by those capacity ratings?

A. Round-trip delay
B. Bandwidth
C. Distance
D. Packet loss

Correct answer: B. Bandwidth
The rated bandwidth is the amount of data a link can carry per unit of time. The ratings describe capacity in bits per second.

6. A library connects the local networks of branches in two different towns. What does the network linking those branches span?

A. A wide area
B. One wireless access point’s room
C. One shared printer’s internal bus
D. One keyboard’s connection

Correct answer: A. A wide area
A wide area network can link separate local networks across a much larger geographic area.

7. Which device normally forwards data from one network toward another on its way to a destination?

A. An optical disc drive
B. An audio mixer
C. A barcode scanner
D. A router

Correct answer: D. A router
A router forwards data between networks. A basic local switch connects devices within a network.

8. One message takes 24 milliseconds to arrive. Its immediate reply takes 31 milliseconds to return. What round-trip delay does the sender observe?

A. 31 milliseconds
B. 7 milliseconds
C. 55 milliseconds
D. 744 milliseconds

Correct answer: C. 55 milliseconds
The observed round trip includes both directions, so the two delays add to 55 milliseconds.

9. During a five-second trial, a device receives 90 megabits. What average rate of delivered data does the trial show?

A. 18 megabits per second
B. 95 megabits per second
C. 450 megabits per second
D. 0.06 megabits per second

Correct answer: A. 18 megabits per second
Divide the delivered 90 megabits by five seconds to get 18 megabits per second.

10. The Computer History Museum traces Ethernet’s early shared-medium design to which wireless network in Hawaii?

A. Teletext
B. Minitel
C. CompuServe
D. ALOHAnet

Correct answer: D. ALOHAnet
The museum documents how Ethernet drew on ideas from Hawaii’s ALOHAnet when adapting a shared transmission medium to cables.

11. A fictional library link has a 40 Mb/s capacity and a 12 ms round-trip delay. A second has 80 Mb/s and 48 ms. Which linked pair matches those measurements?

A. The second has both a lower round-trip delay and a higher capacity.
B. The first has both a lower round-trip delay and a higher capacity.
C. The first has a lower round-trip delay, and the second has a higher capacity.
D. The two links have the same round-trip delay and capacity.

Correct answer: C. The first has a lower round-trip delay, and the second has a higher capacity.
The first delay is lower because 12 ms is less than 48 ms. The second capacity is higher because 80 Mb/s exceeds 40 Mb/s.

12. A fictional link delivers data at a steady 24 megabits per second. At eight bits per byte, how long does a 12-megabyte file take at that rate?

A. 0.5 seconds
B. 4 seconds
C. 8 seconds
D. 96 seconds

Correct answer: B. 4 seconds
Twelve megabytes equal 96 megabits using matching prefix units. Dividing 96 megabits by 24 megabits per second gives four seconds.

13. A file crosses two links in sequence, rated 90 Mb/s and 30 Mb/s. Ignoring overhead, what is the largest steady long-file rate those two links can support end to end?

A. 120 Mb/s
B. 60 Mb/s
C. 90 Mb/s
D. 30 Mb/s

Correct answer: D. 30 Mb/s
Every bit must cross the slower 30 Mb/s link. That link bounds the steady end-to-end rate regardless of the other link’s capacity.

14. A fictional lab expects 240 distinct packets. The receiver records 234 of them, including 18 that arrived in a different order. What percentage failed to arrive?

A. 2.5%
B. 7.5%
C. 10%
D. 97.5%

Correct answer: A. 2.5%
Six of the 240 packets are absent, giving 6 ÷ 240 = 2.5%. The 18 reordered packets are already included among those received.

15. What did the Computer History Museum’s record show the 1977 internetting demonstration connecting?

A. One radio network and two nationwide telephone exchanges
B. Three terminals linked only to one local office switch
C. A packet radio network, a satellite network, and ARPANET
D. Three copies of one computer connected to the same printer

Correct answer: C. A packet radio network, a satellite network, and ARPANET
The demonstration carried messages among the packet radio network, the satellite network, and ARPANET. It illustrated communication across different networks.