
**Data Communications
and Networking**
Fourth Edition

Forouzan

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Multiple Choice Quiz

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Please answer all questions.

- 1 What is the hexadecimal equivalent of the Ethernet address 01011010 00010001 01010101 00011000 10101010 00001111?
☐ A) 5A:88:AA:18:55:F0
☐ B) 5A:81:BA:81:AA:0F
☐ C) 5A:18:5A:18:55:0F
☐ D) 5A:11:55:18:AA:0F
- 2 If an Ethernet destination address is 07:01:02:03:04:05, then this is a _____ address.
☐ A) unicast
☐ B) multicast
☐ C) broadcast
☐ D) any of the above
- 3 If an Ethernet destination address is 08:07:06:05:44:33, then this is a _____ address.
☐ A) unicast
☐ B) multicast
☐ C) broadcast
☐ D) any of the above
- 4 Which of the following could not be an Ethernet unicast destination?
☐ A) 43:7B:6C:DE:10:00
☐ B) 44:AA:C1:23:45:32
☐ C) 46:56:21:1A:DE:F4
☐ D) 48:32:21:21:4D:34
- 5 Which of the following could not be an Ethernet multicast destination?
☐ A) B7:7B:6C:DE:10:00
☐ B) 7B:AA:C1:23:45:32
☐ C) 7C:56:21:1A:DE:F4
☐ D) 83:32:21:21:4D:34
- 6 _____ is the most widely used local area network protocol.
☐ A) Token Ring
☐ B) Token Bus
☐ C) Ethernet
☐ D) none of the above
- 7 The IEEE 802.3 Standard defines _____ CSMA/CD as the access method for first-generation 10-Mbps Ethernet.
☐ A) 1-persistent
☐ B) p-persistent
☐ C) non-persistent
☐ D) none of the above
- 8 The _____ layer of Ethernet consists of the LLC sublayer and the MAC sublayer.
☐ A) data link
☐ B) physical
☐ C) network
☐ D) none of the above
- 9 The _____ sublayer is responsible for the operation of the CSMA/CD access method and framing.
☐ A) LLC
☐ B) MII
☐ C) MAC
☐ D) none of the above

- 10** Each station on an Ethernet network has a unique _____ address imprinted on its network interface card (NIC).
- ☐ **A)** 5-byte
 - ☐ **B)** 32-bit
 - ☐ **C)** 48-bit
 - ☐ **D)** none of the above
-

- 11** The minimum frame length for 10-Mbps Ethernet is _____ bytes.
- ☐ **A)** 32
 - ☐ **B)** 80
 - ☐ **C)** 128
 - ☐ **D)** none of the above
-

- 12** The maximum frame length for 10-Mbps Ethernet is _____ bytes.
- ☐ **A)** 1518
 - ☐ **B)** 1500
 - ☐ **C)** 1200
 - ☐ **D)** none of the above
-

- 13** _____ uses thick coaxial cable.
- ☐ **A)** 10Base5
 - ☐ **B)** 10Base2
 - ☐ **C)** 10Base-T
 - ☐ **D)** 10Base-F
-

- 14** _____ uses thin coaxial cable.
- ☐ **A)** 10Base5
 - ☐ **B)** 10Base2
 - ☐ **C)** 10Base-T
 - ☐ **D)** 10Base-F
-

- 15** _____ uses four twisted-pair cables that connect each station to a common hub.
- ☐ **A)** 10Base5
 - ☐ **B)** 10Base2
 - ☐ **C)** 10Base-T
 - ☐ **D)** 10Base-F
-

- 16** _____ uses fiber-optic cable.
- ☐ **A)** 10Base5
 - ☐ **B)** 10Base2
 - ☐ **C)** 10Base-T
 - ☐ **D)** 10Base-F
-

- 17** Fast Ethernet has a data rate of _____ Mbps.
- ☐ **A)** 10
 - ☐ **B)** 100
 - ☐ **C)** 1000
 - ☐ **D)** 10,000
-

- 18** In _____, autonegotiation allows two devices to negotiate the mode or data rate of operation.
- ☐ **A)** Standard
 - ☐ **B)** Fast Ethernet
 - ☐ **C)** Gigabit Ethernet
 - ☐ **D)** Ten-Gigabit Ethernet
-

- 19** _____ uses two pairs of twisted-pair cable.
- ☐ **A)** 100Base-TX
 - ☐ **B)** 100Base-FX
 - ☐ **C)** 100Base-T4
 - ☐ **D)** none of the above
-

- 20** _____ uses two fiber-optic cables.
- ☐ **A)** 100Base-TX
 - ☐ **B)** 100Base-FX

- ☐ C) 100Base-T4
☐ D) none of the above
-

21 _____ uses four pairs of voice-grade, or higher, twisted-pair cable.

- ☐ A) 100Base-TX
☐ B) 100Base-FX
☐ C) 100Base-T4
☐ D) none of the above
-

22 Gigabit Ethernet has a data rate of _____ Mbps.

- ☐ A) 10
☐ B) 100
☐ C) 1000
☐ D) 10,000
-

23 Gigabit Ethernet access methods include _____ mode.

- ☐ A) half-duplex
☐ B) full-duplex
☐ C) both (a) and (b)
☐ D) neither (a) nor (b)
-

24 _____ uses two optical fibers and a short-wave laser source,

- ☐ A) 1000Base-SX
☐ B) 1000Base-LX
☐ C) 1000Base-T
☐ D) none of the above
-

25 _____ uses two optical fibers and a long-wave laser source.

- ☐ A) 1000Base-SX
☐ B) 1000Base-LX
☐ C) 1000Base-T
☐ D) none of the above
-

26 _____ uses four twisted pairs.

- ☐ A) 1000Base-SX
☐ B) 1000Base-LX
☐ C) 1000Base-T
☐ D) none of the above
-

27 _____ uses short-wave 850-nm multimode fiber.

- ☐ A) 10GBase-S
☐ B) 10GBase-L
☐ C) 10GBase-E
☐ D) none of the above
-

28 _____ uses long-wave 1310-nm single mode fiber.

- ☐ A) 10GBase-S
☐ B) 10GBase-L
☐ C) 10GBase-E
☐ D) none of the above
-

29 _____ uses 1550-nm single mode fiber.

- ☐ A) 10GBase-S
☐ B) 10GBase-L
☐ C) 10GBase-E
☐ D) none of the above
-

30 In Ethernet addressing, if the least significant bit of the first byte is 0, the address is _____.

- ☐ A) unicast
☐ B) multicast
☐ C) broadcast
☐ D) none of the above
-

31 In Ethernet addressing, if the least significant bit of the first byte is 1, the

- 31 address is _____.
☐ A) unicast
☐ B) multicast
☐ C) broadcast
☐ D) none of the above
-
- 32 In Ethernet addressing, if all the bits are 1s, the address is _____.
☐ A) unicast
☐ B) multicast
☐ C) broadcast
☐ D) none of the above
-
- 33 _____ defines a protocol data unit (PDU) that is somewhat similar to that of HDLC.
☐ A) MAC
☐ B) LLC
☐ C) LLU
☐ D) none of the above
-
- 34 The purpose of the _____ is to provide flow and error control for the upper-layer protocols that actually demand these services
☐ A) MAC
☐ B) LLC
☐ C) LLU
☐ D) none of the above
-
- 35 In the Ethernet, the _____ field is actually added at the physical layer and is not (formally) part of the frame.
☐ A) CRC
☐ B) preamble
☐ C) address
☐ D) none of the above
-
- 36 In the Ethernet frame, the _____ field contains error detection information.
☐ A) CRC
☐ B) preamble
☐ C) address
☐ D) none of the above
-
- 37 Standard Ethernet (10-Mbps) uses _____ encoding
☐ A) NRZ
☐ B) AMI
☐ C) Manchester
☐ D) differential Manchester
-
- 38 100Base-TX uses _____ block coding and _____ line coding.
☐ A) 4B/5B; NRZ
☐ B) 8B/10B; NRZ
☐ C) 4B/5B; MLT-3
☐ D) 8B/10B; NRZ
-
- 39 100Base-FX uses _____ block coding and _____ line coding.
☐ A) 4B/5B; NRZ-I
☐ B) 8B/10B; NRZ
☐ C) 4B/5B; MLT-3
☐ D) 8B/10B; NRZ
-
- 40 100Base-T4 uses _____ line coding.
☐ A) NRZ
☐ B) 8B6T
☐ C) MLT-3
☐ D) Manchester
-
- 41 1000Base-SX, 1000Base-LX, and 1000Base-CX use _____ block coding and _____ line coding.
☐ A) 4B/5B; NRZ
☐ B) 8B/10B; NRZ
☐ C) 4B/5B; MLT-3

☐ D) 8B/10B; NRZ

42 1000Base-T uses _____ line coding.

- ☐ A) 4D-PAM5
- ☐ B) 8B6T
- ☐ C) MLT-3
- ☐ D) Manchester

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