

***Business Data Networks and Telecommunications, 8e (Panko)***  
**Chapter 2 Network Standards**

1) Network standards are also called protocols.

A) True.

B) False.

Answer: A

Diff: 1 Page Ref: 45

TYU: 1b

2) Standards govern \_\_\_\_\_.

A) semantics

B) syntax

C) Both A and B

D) Neither A nor B

Answer: C

Diff: 2 Page Ref: 49

TYU: 2a

3) The meaning of a message is referred to as the message's \_\_\_\_\_.

A) protocol

B) order

C) value

D) syntax

E) semantics

Answer: E

Diff: 1 Page Ref: 51

TYU: 2c

4) How a message is organized is its \_\_\_\_\_.

A) syntax

B) semantics

C) order

D) Both A and B

Answer: A

Diff: 1 Page Ref: 51

TYU: 2c

5) In HTTP, a server may initiate an interaction with the client.

A) True.

B) False.

Answer: B

Diff: 2 Page Ref: 51

TYU: 3b

6) Host P transmits a SYN to Host Q. If host Q is willing to open the connection, it will transmit a(n) \_\_\_\_\_ segment.

- A) ACK
- B) SYN
- C) SYN/ACK
- D) None of the above.

Answer: C

Diff: 1 Page Ref: 52

TYU: 3c

7) If the destination host does not receive a segment, it will \_\_\_\_\_.

- A) transmit an ACK segment
- B) transmit a NAC segment
- C) transmit an RSND segment
- D) None of the above.

Answer: D

Diff: 2 Page Ref: 54

TYU: 3d

8) If the destination host receives a segment that is incorrect, it will \_\_\_\_\_.

- A) transmit an ACK segment
- B) transmit a NAC segment
- C) transmit an RST segment
- D) None of the above.

Answer: D

Diff: 2 Page Ref: 54

TYU: 3e

9) A host will retransmit a TCP segment if \_\_\_\_\_.

- A) it receives an ACK segment
- B) it receives a NAC segment
- C) it receives an RST segment.
- D) None of the above.

Answer: D

Diff: 2 Page Ref: 54

TYU: 3f

10) The side wishing to close a TCP segment sends a(n) \_\_\_\_\_ segment.

- A) SYN
- B) ACK
- C) FIN
- D) None of the above.

Answer: C

Diff: 1 Page Ref: 54

TYU: 3g

11) After the side wishing to close a TCP connection sends a FIN segment, it will \_\_\_\_\_.

- A) not send any more segments
- B) only send ACK segments
- C) only send FIN segments
- D) None of the above.

Answer: B

Diff: 2 Page Ref: 54

TYU: 3h

12) Which of the following is NOT one of the three general parts of messages?

- A) Address field.
- B) Header.
- C) Data field.
- D) Trailer.

Answer: A

Diff: 2 Page Ref: 55

TYU: 4a

13) The \_\_\_\_\_ contains the content being delivered by a message.

- A) address field
- B) header
- C) data field
- D) trailer

Answer: C

Diff: 1 Page Ref: 55

TYU: 4b

14) The header is defined as everything that comes before the data field.

- A) True.
- B) False.

Answer: A

Diff: 1 Page Ref: 55

TYU: 4c

15) Messages always have data fields.

- A) True.
- B) False.

Answer: B

Diff: 2 Page Ref: 56

TYU: 4d

16) Most or all messages have trailers.

- A) True.
- B) False.

Answer: B

Diff: 2 Page Ref: 56

TYU: 4f

17) Headers usually are divided into fields.

- A) True.
- B) False.

Answer: A

Diff: 2 Page Ref: 56

TYU: 4g

18) "Octet" is the same as \_\_\_\_\_.

- A) "bit"
- B) "byte"
- C) Either A or B, depending on the context.
- D) Neither A nor B

Answer: B

Diff: 1 Page Ref: 57

TYU: 4h

19) Ethernet addresses are \_\_\_\_\_.

- A) 32 bits long
- B) 48 bits long
- C) 128 bits long
- D) None of the above.

Answer: B

Diff: 1 Page Ref: 57

TYU: 5b

20) Ethernet addresses are \_\_\_\_\_.

- A) 4 octets long
- B) 6 octets long
- C) 32 octets long
- D) 48 octets long

Answer: B

Diff: 2 Page Ref: 57

TYU: 5b

21) In an Ethernet frame, the IP packet is carried in the \_\_\_\_\_ field.

- A) source address
- B) destination address
- C) data
- D) frame check sequence
- E) None of the above.

Answer: C

Diff: 2 Page Ref: 58

TYU: 5d

22) Ethernet does \_\_\_\_\_.

- A) error detection
- B) error correction
- C) Both A and B
- D) Neither A nor B

Answer: A

Diff: 1 Page Ref: 58

TYU: 5e

23) Ethernet detects errors but does not correct them. Therefore, Ethernet is reliable.

- A) True.
- B) False.

Answer: B

Diff: 2 Page Ref: 58

TYU: 5f

24) In an IP header, the first bit in the second row is bit \_\_\_\_\_.

- A) 0
- B) 31
- C) 32
- D) 33
- E) We cannot say.

Answer: C

Diff: 2 Page Ref: 59

TYU: 6b

25) How long are IP addresses?

- A) 32 bits.
- B) 48 bits.
- C) 20 octets.
- D) 32 octets.
- E) 128 bits.

Answer: A

Diff: 1 Page Ref: 59

TYU: 6d

26) B7-22-DD-6F-C8-AB is an \_\_\_\_\_ address.

- A) Ethernet
- B) IP
- C) Either A or B

Answer: A

Diff: 1 Page Ref: 57, 59

TYU: 6e

27) 217.42.18.248 is an \_\_\_\_\_ address.

- A) Ethernet
- B) IP
- C) Either A or B

Answer: B

Diff: 1 Page Ref: 59

TYU: 6e

28) Routers make forward decisions based on a packet's source IP address.

- A) True.
- B) False.

Answer: B

Diff: 1 Page Ref: 59

TYU: 6g

29) Routers make packet forwarding decisions based on a packet's \_\_\_\_\_.

- A) source IP address
- B) destination IP address
- C) Both A and B
- D) Neither A nor B

Answer: B

Diff: 1 Page Ref: 59

TYU: 6g

30) IP is reliable.

- A) True.
- B) False.

Answer: B

Diff: 1 Page Ref: 59

TYU: 6h

31) IP detects errors but does not correct them. Therefore, IP is reliable.

- A) True.
- B) False.

Answer: B

Diff: 2 Page Ref: 59

TYU: 6h

32) To handle internetwork transmission control tasks that IP cannot handle, the IETF created TCP.

- A) True.
- B) False.

Answer: A

Diff: 1 Page Ref: 60

TYU: 7a

33) TCP messages are called \_\_\_\_\_.

- A) frames
- B) data fields
- C) packets
- D) segments
- E) fragments

Answer: D

Diff: 2 Page Ref: 60

TYU: 7c

34) One-bit fields are called \_\_\_\_\_ fields.

- A) digital
- B) binary
- C) flag
- D) ACK
- E) None of the above.

Answer: C

Diff: 1 Page Ref: 60

TYU: 8b

35) If someone says that a 1-bit flag is set, this means that it is given the value \_\_\_\_\_.

- A) 0
- B) 1
- C) Either of the above.
- D) Neither of the above.

Answer: B

Diff: 1 Page Ref: 60

TYU: 8c

36) If the ACK bit is set, the acknowledgement number field MUST have a value.

- A) True.
- B) False.

Answer: A

Diff: 1 Page Ref: 60

TYU: 8d

37) Port fields are found in \_\_\_\_\_.

- A) UDP headers
- B) TCP headers
- C) Both A and B
- D) Neither A nor B

Answer: C

Diff: 1 Page Ref: 60, 62

TYU: 9a

38) UDP checks messages for errors but does not correct them. UDP is \_\_\_\_\_.

- A) reliable
- B) unreliable
- C) Both A and B
- D) Neither A nor B

Answer: B

Diff: 2 Page Ref: 62

TYU: 9d

39) Which of the following has port numbers in its header?

- A) UDP.
- B) TCP.
- C) Both A and B
- D) Neither A nor B

Answer: C

Diff: 1 Page Ref: 62

TYU: 10a

40) Well-known port numbers are associated with \_\_\_\_\_.

- A) applications
- B) switches
- C) routers
- D) None of the above.

Answer: A

Diff: 2 Page Ref: 62

TYU: 10b

41) What is (are) the well-known port number(s) for HTTP?

- A) 20 and 21.
- B) 25.
- C) 80.
- D) None of the above.

Answer: C

Diff: 1 Page Ref: 62

TYU: 10d

42) What is (are) the well-known port number(s) for SMTP?

- A) 20 and 21.
- B) 25.
- C) 80.
- D) None of the above.

Answer: B

Diff: 2 Page Ref: 62

TYU: 10e



43) What is (are) the well-known port number(s) for FTP?

- A) 20 and 21.
- B) 25.
- C) 80.
- D) None of the above.

Answer: A

Diff: 3 Page Ref: 62

TYU: 10f

44) The application layer standard always is HTTP.

- A) True.
- B) False.

Answer: B

Diff: 1 Page Ref: 63

TYU: 11a

45) Which of the following layers has the most standards?

- A) Data link.
- B) Internet.
- C) Transport.
- D) Application.

Answer: D

Diff: 2 Page Ref: 63

TYU: 11b

46) Which layer has more standards?

- A) Internet.
- B) Application.
- C) Both of the above have about the same number of standards.

Answer: B

Diff: 2 Page Ref: 63

TYU: 11b

47) At which layer would you find standards for requesting videos from a video sharing site such as YouTube?

- A) Application.
- B) Transport.
- C) Internet.
- D) Data link.
- E) All of the above.

Answer: A

Diff: 2 Page Ref: 63

TYU: 11c

48) At which layer would you find file transfer protocol standards for downloading files?

- A) Application.
- B) Transport.
- C) Internet.
- D) Data link.
- E) All of the above.

Answer: A

Diff: 3 Page Ref: 63

TYU: 11c

49) Nearly all application standards are simple, like HTTP.

- A) True.
- B) False.

Answer: B

Diff: 1 Page Ref: 63

TYU: 11d

50) In HTTP, most response message header fields consist of a keyword, an equal sign, and the value for the keyword.

- A) True.
- B) False.

Answer: B

Diff: 2 Page Ref: 63

TYU: 11e

51) In HTTP, the end of a header field is indicated by a \_\_\_\_\_.

- A) bit position
- B) byte position
- C) CRLF
- D) colon
- E) blank line

Answer: C

Diff: 2 Page Ref: 65

TYU: 11f

52) An HTTP request message usually has a \_\_\_\_\_.

- A) header
- B) data field
- C) Both A and B
- D) Neither A nor B

Answer: A

Diff: 1 Page Ref: 63

TYU: 11g

53) An HTTP response message has a \_\_\_\_\_.

- A) trailer
- B) data field
- C) Both A and B
- D) Neither A nor B

Answer: B

Diff: 2 Page Ref: 65

TYU: 11h

54) Converting application messages into bits is called \_\_\_\_\_.

- A) encapsulation
- B) encryption
- C) encoding
- D) conversion

Answer: C

Diff: 1 Page Ref: 65

TYU: 12a

55) How many bytes will it take to transmit "Can you hear me now?" without the quotation marks?

- A) 5
- B) 6
- C) 9
- D) 10
- E) None of the above.

Answer: E

Diff: 2 Page Ref: 66

TYU: 13a

56) Binary counting usually begins at 1.

- A) True.
- B) False.

Answer: B

Diff: 2 Page Ref: 66

TYU: 14a

57) In binary, 13 is 1101. What is 14?

- A) 1110
- B) 1111
- C) Neither A nor B

Answer: A

Diff: 1 Page Ref: 67

TYU: 14b

58) If you have a field with N bits, you can represent  $N^2$  items.

A) True.

B) False.

Answer: B

Diff: 2 Page Ref: 67

TYU: 15a

59) A 5-bit field can represent \_\_\_\_\_ alternatives.

A) 4

B) 8

C) 16

D) 32

E) 64

Answer: D

Diff: 1 Page Ref: 67

TYU: 15b

60) Increasing an alternatives field length by one bit always doubles the number of alternatives it can represent.

A) True.

B) False.

Answer: A

Diff: 2 Page Ref: 68

TYU: 15c

61) A 7-bit field can represent \_\_\_\_\_ alternatives.

A) 14

B) 49

C) 128

D) 256

E) 512

Answer: C

Diff: 1 Page Ref: 67-68

TYU: 15d

62) To represent 65 alternatives, your alternatives field would have to be \_\_\_\_\_ bits long.

A) 4

B) 5

C) 6

D) 7

E) 8

Answer: D

Diff: 1 Page Ref: 68

TYU: 15f

63) \_\_\_\_\_ is placing a message in the data field of another message.

- A) Nesting
- B) Vertical communication
- C) Layering
- D) Encapsulation

Answer: D

Diff: 1 Page Ref: 69

TYU: 16a

64) The fact that two processes other than physical layer processes cannot communicate directly requires the use of encapsulation.

- A) True.
- B) False.

Answer: A

Diff: 2 Page Ref: 69

TYU: 16b

65) After the internet layer process does encapsulation, it passes the IP packet to the \_\_\_\_\_ layer process.

- A) physical
- B) transport
- C) data link
- D) application
- E) None of the above.

Answer: C

Diff: 1 Page Ref: 69-70

TYU: 16c

66) After the data link layer process does encapsulation, it passes the IP packet to the \_\_\_\_\_ layer process.

- A) physical
- B) transport
- C) data link
- D) application
- E) None of the above.

Answer: A

Diff: 1 Page Ref: 69-70

TYU: 16d

67) Which layer process does NOT do encapsulation when an application layer process transmits a message?

- A) Physical.
- B) Transport.
- C) Data link.
- D) Internet.
- E) All do encapsulation.

Answer: A

Diff: 2 Page Ref: 70

TYU: 16e

68) Network standards architectures break the standards functionality needed for communication into layers and define the functions of each layer.

- A) True.
- B) False.

Answer: A

Diff: 2 Page Ref: 70

TYU: 17a

69) In what order are standards and standards architectures developed?

- A) The standards architecture is developed first.
- B) Individual standards are developed first.
- C) They are developed simultaneously.

Answer: A

Diff: 1 Page Ref: 70

TYU: 17b

70) Which of the following is a network standards architecture?

- A) ISO.
- B) TCP/IP.
- C) Both A and B
- D) Neither A nor B

Answer: B

Diff: 2 Page Ref: 71

TYU: 17c

71) What is the dominant network standards architecture in most real firms today?

- A) OSI.
- B) TCP/IP.
- C) Neither A nor B

Answer: C

Diff: 2 Page Ref: 71

TYU: 17d

72) A corporate network can use either OSI standards at all layers or TCP/IP standards at all layers, but cannot use OSI standards at some layers and TCP/IP standards at other layers.

A) True.

B) False.

Answer: B

Diff: 2 Page Ref: 72

TYU: 17e

73) Which of the following is a standards agency for OSI?

A) IETF.

B) ITU-T.

C) Both A and B

D) Neither A nor B

Answer: B

Diff: 2 Page Ref: 73

TYU: 18a

74) Which of the following is a network standards architecture?

A) ISO.

B) OSI.

C) Both A and B

D) Neither A nor B

Answer: B

Diff: 2 Page Ref: 72

TYU: 18a

75) OSI is dominant at the \_\_\_\_\_ layer.

A) physical

B) internet

C) Both A and B

D) Neither A nor B

Answer: A

Diff: 2 Page Ref: 73

TYU: 18b

76) OSI is dominant at the \_\_\_\_\_ layer.

A) data link

B) transport

C) Both A and B

D) Neither A nor B

Answer: A

Diff: 2 Page Ref: 73

TYU: 18b

77) OSI is dominant at the \_\_\_\_\_ layer.

- A) transport
- B) internet
- C) Both A and B
- D) Neither A nor B

Answer: D

Diff: 2 Page Ref: 73

TYU: 18b

78) The OSI \_\_\_\_\_ layer allows application communication to be restarted at the last rollback point.

- A) application
- B) presentation
- C) session
- D) transport
- E) All of the above.

Answer: C

Diff: 3 Page Ref: 74

TYU: 18c

79) The OSI \_\_\_\_\_ layer is designed to handle data formatting differences between two computers.

- A) application
- B) presentation
- C) session
- D) data
- E) All of the above.

Answer: B

Diff: 3 Page Ref: 74

TYU: 18d

80) The OSI \_\_\_\_\_ layer is designed to handle compression and encryption for applications.

- A) application
- B) presentation
- C) session
- D) data
- E) All of the above.

Answer: B

Diff: 3 Page Ref: 74

TYU: 18d



81) The OSI presentation layer is **actually** used \_\_\_\_\_.  
A) to convert between file formats  
B) as a category for data file standards used by multiple applications  
Answer: B  
Diff: 3 Page Ref: 74  
TYU: 18e

82) Which of the following is NOT an OSI layer?  
A) Data link.  
B) Internet.  
C) Session.  
D) Presentation.  
E) Application.  
Answer: B  
Diff: 2 Page Ref: 74  
TYU: 18f

83) In OSI, the presentation layer is Layer \_\_\_\_\_.  
A) 7  
B) 6  
C) 5  
D) 4  
E) None of the above.  
Answer: B  
Diff: 3 Page Ref: 74  
TYU: 18f

84) Which of the following is an architecture?  
A) IP.  
B) TCP.  
C) Both A and B  
D) Neither A nor B  
Answer: D  
Diff: 2 Page Ref: 75  
TYU: 19a

85) Which of the following is a standard?  
A) TCP/IP.  
B) IP.  
C) Both A and B  
D) Neither A nor B  
Answer: B  
Diff: 2 Page Ref: 75  
TYU: 19b

86) Which of the following is the standards agency for TCP/IP?

- A) ITU-T.
- B) IETF.
- C) OSI.
- D) TCP/IP.

Answer: B

Diff: 1 Page Ref: 75

TYU: 19c

87) TCP/IP became dominant in corporations primarily because of \_\_\_\_\_.

- A) its use on the Internet
- B) its relatively simple standards

Answer: B

Diff: 3 Page Ref: 75

TYU: 19d

88) Most IETF documents are called \_\_\_\_\_.

- A) official internet standards
- B) TCP/IP standards
- C) RFCs
- D) None of the above.

Answer: C

Diff: 2 Page Ref: 76

TYU: 19e

89) TCP/IP is dominant at the \_\_\_\_\_ layer(s).

- A) physical
- B) internet
- C) Both A and B
- D) Neither A nor B

Answer: B

Diff: 2 Page Ref: 76

TYU: 19f

90) TCP/IP is dominant at the \_\_\_\_\_ layer(s).

- A) data link
- B) transport
- C) Both A and B
- D) Neither A nor B

Answer: B

Diff: 2 Page Ref: 76

TYU: 19f

91) TCP/IP is dominant at the \_\_\_\_\_ layer(s).

- A) transport
- B) internet
- C) Both A and B
- D) Neither A nor B

Answer: C

Diff: 2 Page Ref: 76

TYU: 19f

92) Which of the following is more dominant in its layers of dominance?

- A) TCP/IP.
- B) OSI.
- C) Both of the above are about equally dominant.

Answer: B

Diff: 2 Page Ref: 76

TYU: 19g

93) Which standards architecture is dominant at the application layer?

- A) OSI.
- B) TCP/IP.
- C) Neither A nor B

Answer: C

Diff: 3 Page Ref: 76-77

TYU: 20a

94) Almost all applications, regardless of what standards architecture they come from, can run over TCP/IP standards at the internet and transport layers.

- A) True.
- B) False.

Answer: A

Diff: 2 Page Ref: 77

TYU: 20b

95) Which layer(s) of the hybrid TCP/IP—OSI standards architecture normally use(s) OSI standards?

- A) Data link.
- B) Transport.
- C) Both A and B
- D) Neither A nor B

Answer: A

Diff: 2 Page Ref: 77

TYU: 21a

96) Which layer(s) of the hybrid TCP/IP—OSI standards architecture normally use(s) TCP/IP standards?

- A) Data link.
- B) Transport.
- C) Both A and B
- D) Neither A nor B

Answer: B

Diff: 2 Page Ref: 77

TYU: 21b

97) Wireless LAN transmission normally is governed by \_\_\_\_\_ standards.

- A) TCP/IP
- B) OSI
- C) Neither A nor B
- D) Both A and B

Answer: B

Diff: 3 Page Ref: 77-78

TYU: 21c

98) Switched WAN transmission is governed by \_\_\_\_\_ standards.

- A) TCP/IP
- B) OSI
- C) Both A and B
- D) Neither A nor B

Answer: B

Diff: 2 Page Ref: 77-78

TYU: 21d

99) Novell NetWare servers traditionally used \_\_\_\_\_ standards.

- A) TCP/IP
- B) OSI
- C) IPX/SPX
- D) AppleTalk
- E) SNA

Answer: C

Diff: 3 Page Ref: 77-78

TYU: 22a

100) IBM mainframes traditionally used \_\_\_\_\_ internetworking standards.

- A) TCP/IP
- B) OSI
- C) IPX/SPX
- D) AppleTalk
- E) SNA

Answer: E

Diff: 3 Page Ref: 78

TYU: 22b