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