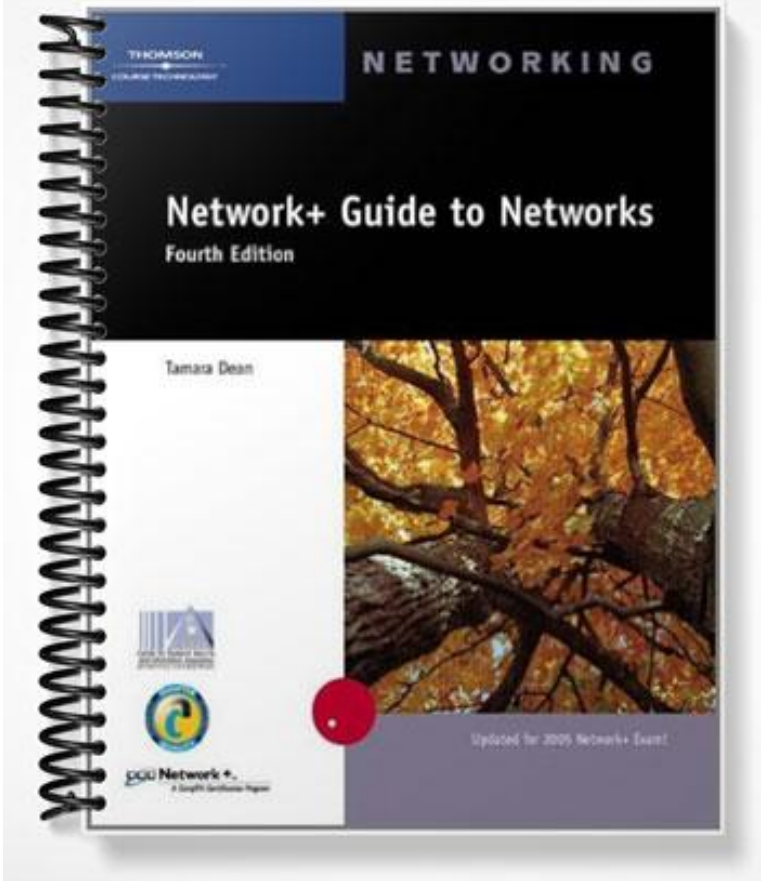
TEST BANK


THOMSON
COURSE TECHNOLOGY
NETWORKING
Network+ Guide to Networks
Fourth Edition
Tamara Dean
Updated for 2005 Network+ Exam!

Chapter 2: Networking Standards and the OSI Model

TRUE/FALSE

1. Every process that occurs during network communications can be associated with a layer of the OSI Model.

   ANS: T PTS: 1 REF: 44

2. Among the Session layer's functions are establishing and keeping alive the communications link for the duration of the session, keeping the communication secure, synchronizing the dialogue between the two nodes, determining whether communications have been cut off, and, if so, figuring out where to restart transmission, and terminating communications.

   ANS: T PTS: 1 REF: 47

3. The primary function of protocols at the session layer is to translate network addresses into their physical counterparts and decide how to route data from the sender to the receiver.

   ANS: F PTS: 1 REF: 50

4. Addressing is a system for assigning unique identification numbers to devices on a network.

   ANS: T PTS: 1 REF: 50

5. Connectivity devices such as hubs and repeaters operate at the Presentation layer of the OSI Model.

   ANS: F PTS: 1 REF: 55

MULTIPLE CHOICE

1. ____ are documented agreements containing technical specifications or other precise criteria that stipulate how a particular product or service should be designed or performed.
   a. Protocols
   b. Standards
   c. Sessions
   d. Routers

   ANS: B PTS: 1 REF: 40

2. ____ is an organization composed of more than a thousand representatives from industry and government who together determine standards for the electronics industry and other fields, such as chemical and nuclear engineering, health and safety, and construction.
   a. ISO
   b. ISOC
   c. ANSI
   d. ICANN

   ANS: C PTS: 1 REF: 41

3. ____ is a trade organization composed of representatives from electronics manufacturing firms across the United States.
   a. EIA
   b. CRC
   c. IEEE
   d. ISOC

   ANS: A PTS: 1 REF: 41

4. The ____ is a specialized United Nations agency that regulates international telecommunications, including radio and TV frequencies, satellite and telephony specifications, networking infrastructure, and tariffs applied to global communications.
   a. IETF
   b. IANA
   c. ISP
   d. ITU

   ANS: D PTS: 1 REF: 42

5. ____ is a technical advisory group of researchers and technical professionals interested in overseeing the Internet's design and management.
   a. ITU
   b. IAB
   c. MTU
   d. LLC

   ANS: B PTS: 1 REF: 43

6. Addresses used to identify computers on the Internet and other TCP/IP-based networks are known as ____ addresses.
   a. TCP
   b. MAC
   c. IP
   d. MTU

   ANS: C PTS: 1 REF: 43

7. The Application layer separates data into ____ or discrete amounts of data.
   a. network addresses
   b. tokens
   c. sessions
   d. protocol data units

   ANS: D PTS: 1 REF: 45

8. The top, or seventh, layer of the OSI Model is the ____ layer
   a. Application
   b. Session
   c. Transport
   d. Network

   ANS: A PTS: 1 REF: 46

9. Through ____ layer protocols, software applications negotiate their formatting, procedural, security, synchronization, and other requirements with the network.
   a. Session
   b. Application
   c. Data link
   d. Transport

   ANS: B PTS: 1 REF: 46

10. Protocols at the ____ layer accept Application layer data and format it so that one type of application and host can understand data from another type of application and host.
    a. Data link
    b. Physical
    c. Presentation
    d. Network

    ANS: C PTS: 1 REF: 47

11. Protocols in the ____ layer coordinate and maintain communications between two nodes on the network.
    a. Application
    b. Physical
    c. Data link
    d. Session

    ANS: D PTS: 1 REF: 47

12. ____ are added to data at the source and verified at the destination.

a. Segments
b. Packets
c. Checksums
d. Frames

ANS: C PTS: 1 REF: 48

13. Transport layer protocols break large data units received from the Session layer into multiple smaller units, called ____.
a. segments
b. checksums
c. frames
d. sessions

ANS: A PTS: 1 REF: 49

14. ____ is a method of identifying segments that belong to the same group of subdivided data.
a. Reassembly
b. Fragmentation
c. Sequencing
d. Addressing

ANS: C PTS: 1 REF: 49

15. A(n) ____ is a structured package for moving data that includes not only the raw data, or "payload," but also the sender's and receiver's network addresses, and error checking and control information.
a. segment
b. frame
c. router
d. token

ANS: B PTS: 1 REF: 52

16. The primary function of protocols in the ____ layer, is to divide data they receive from the Network layer into distinct frames that can then be transmitted by the Physical layer.
a. Application
b. Network
c. Transport
d. Data Link

ANS: D PTS: 1 REF: 52

17. ____ addresses contain two parts: a Block ID and a Device ID.
a. IP
b. MAC
c. Session
d. Ethernet

ANS: B PTS: 1 REF: 55

18. The ____ layer is the lowest, or first, layer of the OSI Model.
a. Physical
b. Application
c. Transport
d. Data link

ANS: A PTS: 1 REF: 55

19. Protocols at the ____ layer accept frames from the Data Link layer and generate voltage so as to transmit signals.
a. Session
b. Application
c. Network
d. Physical

ANS: D PTS: 1 REF: 55

20. Connectivity devices such as hubs and repeaters operate at the ____ layer.
a. Session
b. Physical
c. Application
d. Network

ANS: B PTS: 1 REF: 55

21. ____ is the process of gauging the appropriate rate of transmission based on how fast the recipient can accept data.
    a. Flow control
    b. Routing
    c. Segmentation
    d. Virtual addressing

    ANS: A PTS: 1 REF: 48

COMPLETION

1. The _____ goal is to establish international technological standards to facilitate global exchange of information and barrier-free trade.

   ANS:
   ISO's
   International Organization for Standardization's

   PTS: 1 REF: 42

2. _____ layer services facilitate communication between software applications and lower-layer network services so that the network can interpret an application's request and, in turn, the application can interpret data sent from the network.

   ANS: Application

   PTS: 1 REF: 46

3. Transport layer protocols that do not establish a connection before transmission and make no effort to ensure that data is delivered error-free are called _____ protocols.

   ANS: connectionless

   PTS: 1 REF: 48

4. _____ is the process of reconstructing the segmented data units.

   ANS: Reassembly

   PTS: 1 REF: 49

5. At the Network layer, _____ ensures that packets issued to the network are no larger than the network's maximum transmission unit size.

   ANS: fragmentation

   PTS: 1 REF: 52

MATCHING

Match each term with the correct statement below.

a. Standards
b. International Telecommunication Union
c. Internet Architecture Board
d. ICANN
f. TCP
g. Checksum
h. Sequencing
i. Router

e. ISP

1. Responsible for Internet growth and management strategy, resolution of technical disputes, and standards oversight.
2. A connection-oriented protocol.
3. Define the minimum acceptable performance of a product or service.
4. A unique character string that allows the receiving node to determine if an arriving data unit matches exactly the data unit sent by the source.
5. Responsible for IP addressing and domain name management.
6. A method of identifying segments that belong to the same group of subdivided data.
7. A business that provides organizations and individuals with access to the Internet and often, other services, such as e-mail and Web hosting.
8. Device that connects network segments and direct data.
9. Provides developing countries with technical expertise and equipment to advance those nations' technological bases.

1. ANS: C PTS: 1 REF: 43
2. ANS: F PTS: 1 REF: 48
3. ANS: A PTS: 1 REF: 40
4. ANS: G PTS: 1 REF: 48
5. ANS: D PTS: 1 REF: 44
6. ANS: H PTS: 1 REF: 49
7. ANS: E PTS: 1 REF: 44
8. ANS: I PTS: 1 REF: 51
9. ANS: B PTS: 1 REF: 42

SHORT ANSWER

1. What are the goals of the Institute of Electrical and Electronics Engineers?

   ANS:
   Its goals are to promote development and education in the electrical engineering and computer science fields. To this end, IEEE hosts numerous symposia, conferences, and local chapter meetings and publishes papers designed to educate members on technological advances. It also maintains a standards board that establishes its own standards for the electronics and computer industries and contributes to the work of other standards-setting bodies, such as ANSI.

   PTS: 1 REF: 42

2. What are the functions of the Session layer (OSI model)?

   ANS:
   Among the Session layer's functions are establishing and keeping alive the communications link for the duration of the session, keeping the communication secure, synchronizing the dialogue between the two nodes, determining whether communications have been cut off, and, if so, figuring out where to restart transmission, and terminating communications. Session layer services also set the terms of communication by deciding which node will communicate first and how long a node can communicate. Finally, the Session layer monitors the identification of session participants, ensuring that only the authorized nodes can access the session.

   PTS: 1 REF: 47

3. With respect to Network layer protocols, what are the factors to be considered when determining the path from point A on one network to point B on another network?

   ANS:
   Factors to be considered include:

   Delivery priorities
   Network congestion
   Quality of service
   Cost of alternative routes

   PTS: 1 REF: 51

4. What is the difference between Ethernet and Token Ring?

   ANS:
   Ethernet is a networking technology originally developed at Xerox in the early 1970s and improved by Digital Equipment Corporation, Intel, and Xerox. There are four different types of Ethernet frames. The most popular form of Ethernet is characterized by the unique way in which devices share a common transmission channel, described in the IEEE 802.3 standard.

   Token Ring is a networking technology developed by IBM in the 1980s. It relies upon direct links between nodes and a ring topology. Nodes pass around tokens, special control frames that indicate to the network when a particular node is about to transmit data.

   PTS: 1 REF: 59

5. What is the purpose of the Internet Engineering Task Force?

   ANS:
   IETF is the organization that sets standards for how systems communicate over the Internet - in particular, how protocols operate and interact. The standard then undergoes elaborate review, testing, and approval processes. On an international level, IETF works with the ITU to help give technical standards approved in the United States international acceptance.

   PTS: 1 REF: 43

6. What is the purpose of the Hypertext Transfer Protocol?

   ANS:
   The Hypertext Transfer Protocol formats and sends your request from your client's browser (a software application) to the server. It also formats and sends the Web server's response back to your client's browser.

   PTS: 1 REF: 46

7. What is the difference between a connection oriented protocol and a connectionless protocol?

   ANS:
   Connection-oriented protocols establish a connection with another node before they begin transmitting data. Protocols that do not establish a connection before transmitting and make no effort to ensure that data is delivered error-free are called connectionless protocols

   PTS: 1 REF: 48

8. Provide a brief description of each of the layers of the OSI model.

   ANS:
   Application (Layer 7): Provides interface between software applications and network for interpreting applications' requests and requirements.
   Presentation (Layer 6): Allows hosts and applications to use a common language; performs data formatting, encryption, and compression.
   Session (Layer 5): Establishes, maintains, and terminates user connections.
   Transport (Layer 4): Ensures accurate delivery of data through flow control, segmentation and reassembly, error correction, and acknowledgment.
   Network (Layer 3): Establishes network connections; translates network addresses into their physical counterparts and determines routing.
   Data Link (Layer 2): Packages data in frames appropriate to network transmission method.
   Physical (Layer 1): Manages signaling to and from physical network connections.

   PTS: 1 REF: 56

9. What is the difference between a packet and a frame?

   ANS:
   A packet is a piece of information that contains network addressing information and a frame is a piece of data enclosed by a Data Link layer header and trailer.

   PTS: 1 REF: 58

10. Why is it important for you to know what frame type your network environment requires?

    ANS:
    You will use this information when installing network operating systems, configuring servers and client workstations, installing NICs, troubleshooting network problems, and purchasing network equipment.

    PTS: 1 REF: 59