Name _____ Date _____

Chapter 10
Student Version

Chapter 10 Objectives:

- Explain how the functions of the application layer, session layer, and presentation layer work together to provide network services to end user applications.
- Describe how common application layer protocols interact with end user applications.
- Describe, at a high level, common application layer protocols that provide Internet services to end-users, including WWW services and email.
- Describe application layer protocols that provide IP addressing services, including DNS and DHCP.
- Describe the features and operation of well-known application layer protocols that allow for file sharing services, including: FTP, File Sharing Services, SMB protocol.
- Explain how data is moved across the network, from opening an application to receiving data.

Required Materials:

Reading Organizer

Packet Tracer Activities:
- 10.2.1.8 Packet Tracer - Web and Email Instructions
- 10.2.2.8 Packet Tracer - DNS and DHCP Instructions
- 10.2.3.2 Packet Tracer - FTP Instructions
- 10.4.1.2 Packet Tracer Multiuser - Tutorial Instructions
- 10.4.1.3 Packet Tracer Multiuser - Implement Services Instructions

Labs:
- 10.0.1.2 Class Activity - What would happen if... Instructions
- 10.1.2.4 Lab - Researching Peer-to-Peer File Sharing
- 10.2.2.9 Lab - Observing DNS Resolution
- 10.2.3.3 Lab - Exploring FTP
- 10.4.1.1 Class Activity - Make it happen! Instructions

Chapter Test

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Points_____ / __98___

Name_____ Date _____

Chapter 10
Reading Organizer
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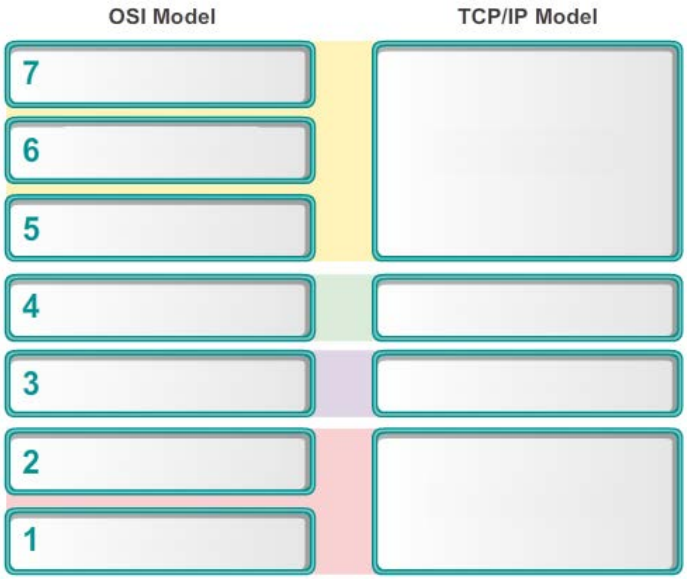
Note: the Reading Organizer has weighted scoring. Any question with the word **explain** or **define** in it is expected to have a longer answer and is worth two points each.

After completion of this chapter, you should be able to:

- Explain how the functions of the application layer, session layer, and presentation layer work together to provide network services to end user applications.
- Describe how common application layer protocols interact with end user applications.
- Describe, at a high level, common application layer protocols that provide Internet services to end-users, including WWW services and email.
- Describe application layer protocols that provide IP addressing services, including DNS and DHCP.
- Describe the features and operation of well-known application layer protocols that allow for file sharing services, including: FTP, File Sharing Services, SMB protocol.
- Explain how data is moved across the network, from opening an application to receiving data.

10.1 Application Layer Protocols

1. Write in the correct layers of the OSI and TCP/IP models.



2. What is the purpose of the application layer?

3. List the common protocols that fall under the application Layer.

a.

b.

c.

d.

e.

4. The presentation layer has three primary functions. These are:

a.

b.

c.

5. List the common protocols that work in the presentation layer.

Video:

a.

b.

Graphic Image Formats:

a.

b.

c.

6. Explain in detail the function of the session layer.

7. The TCP/IP model Application layer is equal to which three OSI model layers?

a.

b.

c.

8. List the protocols that fall under the TCO/IP model Application layer.

a.

b.

c.

d.

e.

f.

g.

h.

i.

j.

9. The P2P network model involves two parts, these are:

a.

b.

10. Why is it difficult to enforce security and access policies in networks containing more than just a few computers?

11. A peer-to-peer (P2P) application allows a device to act as both a _____ and a _____ within the same communication

12. In the client-server model, the device requesting the information is called a _____ and the device responding to the request is called a _____.

13. At what layer of the OSI model is the Client and server processes are considered to be in?

10.2 Well-Known Application Layer Protocols and Service

14. Three application layer protocols that are involved in everyday work or play are:

a.

b.

c.

15. How does a browser interpret the three parts of the URL?

a. **http** -

b. **www.cisco.com –**

c. **index.html** –

16. HTTP is a_____/_____ protocol.

17. List and explain the three common message types used by HTTP.

a. _____ -

b. _____ -

c. _____ -

18. Is HTTP a secure protocol?

19. HTTPS uses the same client request-server response process as HTTP. How is the data stream encrypted before being transported across the network?

20. Email is a _____ method of sending, storing, and retrieving electronic messages across a network.

21. An email client does not communicate directly with another email client when sending email. Explain what happens.

22. Email supports three separate protocols for operation. These are:

a.

b.

c.

23. Clients only use two application layer protocols to retrieve email. These are:

a.

b.

24. What is the purpose of SMTP?

25. Where must SMTP be running in order to operate correctly?

26. What port number does SMTP use?

27. What is the purpose of Post Office Protocol (POP)?

28. What port number does POP use?

29. What is the purpose of Internet Message Access Protocol (IMAP)?

30. Explain in detail how is IMAP different from POP?

31. On the Internet, domain names, such as http://www.cisco.com, are much easier for people to remember than 198.133.219.25, which is the numeric address for this server. Explain what happens if Cisco decides to change the numeric address of www.cisco.com.

32. What is the purpose of a Domain Name System (DNS)?

33. Which Microsoft DOS command displays all of the cached DNS entries on a Windows computer system?

34. The DNS client, sometimes called the _____.

35. Computer operating systems have a utility called nslookup. What does this allow users to do?

36. What services does a DNS Server offer?

a.

b.

c.

d.

37. How is DHCP a security risk?

38. Explain how DHCP operates.

39. What is the purpose of FTP?

40. Explain what is a Server Message Block (SMB)?

41. SMB messages can:

a.

b.

c.

42. SMB file-sharing and print services have become the mainstay of _____networking.

10.3 The Message Heard Around the World

43. What is the application layer is responsible for?