CCNA Discovery 2, Chapter 7. "ISP Services"

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Name:

1. What is an "Enterprise" network and how does it differ from a "WAN"?

2. _____, _____, _____, _____, and _____ are key services that ISPs can provide to all customers.

3. Describe in detail what a "managed service" that an ISP might provide is:

4. Define and describe what an SLA is:

5. What are two measures of reliability? Describe how ISP's ensure reliability:

6. Describe the concept of availability. What is considered an acceptable level of availability and how do ISP's make sure they provide an acceptable level of availability?

7. What are the four layers of the TCP/IP model? Describe what happens at each layer:

8. Define and describe each of the following Application Layer Protocols:
    a. DNS
    b. BOOTP
    c. DHCP
    d. SMTP

e. POP3

f. IMAP4

g. FTP

h. TFTP

i. HTTP

9. Define and describe each of the following Transport Layer Protocols:

   a. TCP

   b. UDP

10. Define and describe each of the following Internet Layer Services and Protocols:

    a. NAT

    b. ICMP

    c. RIP

    d. OSPF

e. EIGRP

f. BGP

11. Define and describe each of the following Network Access Layer Protocols:

    a. ARP

    b. PPP

    c. Ethernet

    d. Interface Drivers

12. List similarities and differences between the TCP/IP model and the OSI model:

13. Compare and contrast the two TCP/IP protocols at the transport layer, TCP and UDP:

14. List the steps in the encapsulation process as it relates the TCP/IP model:

15. Describe the three step process source and destination hosts use to set up the connection over which data segments can be sent:

16. Describe how TCP/IP uses timers, sequence numbers, acknowledgement and retransmission to ensure reliable connection-oriented data delivery:

17. List key Application Layer protocols that use UDP instead of TCP:

18. How does the Transport Layer accomplish the task of managing multiple simultaneous communication processes?

19. Explain why server processes tend to use well-known port numbers while client application requests tend to rely on dynamically assigned port numbers:

20. Explain what a socket is:

21. What is accomplished through the use of socket pairs?

22. What is a HOSTS file? Explain the difference between a central HOSTS file and a local HOSTS file.

23. Print, complete, and submit Lab Activity 7.3.1 "Editing the HOSTS File in Windows"

24. Explain the structure of the Domain Name Service (DNS) hostname resolution system and how it solves the shortcomings of the HOSTS file:

25. List and explain the three components of DNS:

26. Explain what is meant by a FQDN:

27. Print, complete, and submit Lab 7.3.3.a "Examining Cached DNS Information on a Windows DNS Server"

28. Explain what is meant by DNS Dynamic Updates and how this differs from using a DHCP server to update DNS for a client:

29. What is a DNS Forward Lookup Zone?

30. What is a DNS Reverse Lookup Zone?

31. What is a DNS Primary Zone?

32. What is a DNS Secondary Zone?

33. Print, complete, and submit Lab Activity 7.3.3b "Creating Primary and Secondary Forward Lookup Zones"

34. Explain the difference between using ISP DNS servers and using Local DNS servers:

35. When an organization registers a domain name on the Internet, a minimum of two DNS servers must be provided with the registration. WHY?

36. Define:

    a. FTPS

    b. HTTPS

    c. SSL

37. What is meant by a "short URL"?

38. Explain what Proxy services are and list and explain three reasons why proxies are used:

39. What are some reasons why HTTPS is used only when exchanging confidential information and not used all the time?

40. FTP requires two separate processes that work together to transfer files and two connections to exist between the client and server.
One to _____, and a second one for _____.

41. Explain/define the following two components of FTP:

    a. Protocol Interpreter (PI)

    b. Data Transfer Process (DTP)

42. The two types of data transfer connections supported by FTP are active data connections and passive data connections. Explain each:

    a. Active Data Connections

    b. Passive Data Connections

43. Email supports three separate protocols for operation: _____, _____, and _____. The Application Layer process that sends mail, either from a client to a server or between servers, implements the _____ protocol. A client retrieves email using one of two application layer protocols: _____ or _____.

44. For SMTP applications to do this, what two conditions must be met?

45. With _____, mail is downloaded from the server to the client and then deleted on the server.

46. The _____ protocol is desirable for an ISP since it alleviates the ISP's responsibility of managing large amounts of storage for their email servers.

47. Unlike POP3, when the user connects to an _____ server, copies of the messages are downloaded to the client application. The original messages are kept on the server until manually deleted. Users view copies of the messages in their email client software.