Name_____ Date _____

# Chapter 1
# Reading Organizer

**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 multiple networks are used in everyday life.
- Explain the topologies and devices used in a small to medium-sized business network.
- Explain the basic characteristics of a network that supports communication in a small to medium-sized business.
- Explain trends in networking that will affect the use of networks in small to medium-sized businesses.

## 1.0.1.1

1. What is Chapter 1 about?  Describe in a short paragraph:

## Globally Connected

## 1.1.1.1

2. (Watch video) What is the human network?

3. How has the Human Network affected your life?

## 1.1.1.2

4. (Watch video) What is the "Internet of Everything" or IoE?

5. Without the Internet, how would your life be impacted the most? What would change the most?

## 1.1.1.3

6. What is the Human Network?

7. How has the Human Network affected you?

## 1.1.1.4

8. (Watch video) How has the classroom changed in recent years?  Share three of your ideas:

   a.

   b.

   c.

9. How will the classroom continue to change in the future?  Share three of your ideas:

   a.

   b.

   c.

## 1.1.1.5

10. List some of the forms of communications that can be accessed by a global audience.

    a.

    b.

    c.

    d.

    e.

    f.

    g.

11. What other sites or tools do you use to share your thoughts with others?  List two:

    a.

    b.

## 1.1.1.6

12. How are some of the ways that business communication networks have evolved? List four:

    a.

    b.

    c.

    d.

13. What is one of the benefits of online learning?

14. Activity: Use the hyper link at the bottom of 1.1.1.6.  Find the column labeled "Customer Name." Research the case study for DirectTV (watch the video).  How is Cisco and DirectTV working together to provide subscribers with better service?  Describe the improvements:

## 1.1.1.7

15. List three ways we use the Internet for our entertainment:

    a.

    b.

    c.

16. Do you play online games? (Yes/No) _____.  What is the name of a couple of your favorite games? List two:

    a.

    b.

17. Do you play with people from other countries? (Yes/No) _____.  If so, what countries?

    a.

    b.

## LAB: 1.1.1.8 "Researching Network Collaboration Tools"
## 1.1.2.1

18. What is the purpose of a SOHO or Small Office/Home Office?

19. What is the purpose of a Medium to Large Network?

20. What is the purpose of a World Wide Network (Enterprise Network)?

21. What does the term **Internet** mean?  Networkers describe the Internet this way.


## 1.1.2.2

22. What is the difference between "hosts" and "end devices"?


23. What are servers?  Describe to someone who doesn't know.




24. Can server computers run multiple services at once?  If yes, give two examples:
    a.

    b.

25. What are clients?  Describe to someone who doesn't know.




26. Can client computers run multiple services at once?  If yes, give two examples:
    a.

    b.

## 1.1.2.3

27. What is the simplest example of a peer-to-peer network? Describe to someone who doesn't know.

28. What are the advantages of peer-to-peer networking?

    a.

    b.

    c.

    d.

29. What are the disadvantages of peer-to-peer networking?

    a.

    b.

    c.

    d.

## Section 1.2: LANs, WANs, and the Internet
## 1.2.1.1

30. List the three basic network infrastructure categories of network components and what they do:

    a._____ -

    b._____ -

    c._____ -

## 1.2.1.2

31. List six examples of end devices. Can you think of some more?

    a.

    b.

    c.

    d.

    e.

    f.

    g.

## 1.2.1.3

32. List five examples of intermediary network devices:

    a.

    b.

    c.

    d.

    e.

33. Processes running on the intermediary network devices perform what functions?

    a.

    b.

    c.

    d.

    e.

    f.

## 1.2.1.4

34. . What is network media? Describe to someone who doesn't know:

35. What are the three most common types of media and how do they work?

    a._____ -

    b._____ -

    c._____ -

36. Different types of network media have different features and benefits. Not all network media has the same characteristics and is appropriate for the same purpose. What are the criteria for choosing network media?

    a.

    b.

    c.

    d.

## 1.2.1.5

37. Networkers often draw pictures of networks as a way to document the network.  Many network devices and/or concepts are represented by standard pictures or drawings.  What is another name for a network diagram? _____

38. We also use terms associated with the location where data either enters or leaves a device.  These three terms are: (List and describe)

a. _____ -

b. _____ -

c. _____ -

## 1.2.1.6

39. **List** and **explain** the two types of topology diagrams.

    a. _____ –

    b. _____ –

## 1.2.1.7 Activity:  Network Component Functions

## 1.2.2.1

40. Explain the two most common types of network infrastructures.

    a. _____ –

    b. _____ –

41. Network infrastructures can vary greatly in terms of:

    a.

    b.

    c.

    d.

42. Explain the other three types of networks available in the text.

    a. _____ –

    b. _____ –

    c. _____ –

43. (Review) List the device name and check whether the component icon is an End Device, Intermediary Device, or Network Media.

End - Intermediary - Media
☐  ☐  ☐

End - Intermediary - Media
☐  ☐  ☐

End - Intermediary - Media
☐  ☐  ☐

End - Intermediary - Media
☐  ☐  ☐

End - Intermediary - Media
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End - Intermediary - Media
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End - Intermediary - Media
☐  ☐  ☐

## 1.2.2.2

44. Local Area Networks (LANs) are a network infrastructure that spans a small geographical area. Explain what specific features LANs include:

a.

b.

c.

**1.2.2.3**

45. Wide Area Networks (WANs) are a network infrastructure that spans a wide geographical area. WANs are typically managed by service providers (SP) or Internet Service Providers (ISP). Explain what specific features WANs include:

    a.

    b.

    c.

**1.2.3.1**

46. After reading the text, explain to someone who doesn't know what the Internet is?

47. What is the difference between the word internet spelled with a upper-case i and a lower-case i?

**1.2.3.2**

48. Explain the following terms:

    a. Intranet –

    b. Extranet –

## 1.2.4.1

49. List the most common way home users, teleworkers, and small offices connect to the internet through an ISP.

    a.

    b.

    c.

    d.

## 1.2.4.2

50. What internet connection options are commonly used by SOHO's or Small Office-Home Office users? List them:

    a.

    b.

    c.

    d.

    e.

## 1.2.4.3

51. . Business-class internet is typically done through an SP; this may include? List them:

    a.

    b.

    c.

    d.

52. Out of all the internet connection options for either home or business customers, which ones do not require a physical cable to be run to the building?

   a.

   b.

## 1.2.4.4 Packet Tracer: Help and Navigation Tips

## 1.2.4.5 Packet Tracer: Network Representation

53. (Review) Explain in detail the following common connection options for organizations.

   a. Dedicated Leased Line –

   b. Metro Ethernet –

   c. DSL –

   d. Satellite –

## Chapter 1, Section 3
## 1.3 The Network as a Platform
## 1.3.1.1

54. Explain what a traditional, separate network is to someone who doesn't know:

## 1.3.1.2

55. Explain what a converged network is to someone who doesn't know:.

## 1.3.1.3 Lab: Researching Converged Network Services

## 1.3.2.1

30. There are four basic characteristics that underlying network architectures need to address in order to meet user expectations.  These are:

   a.

   b.

   c.

   d.

## 1.3.2.2

56. Explain how a network architecture that is built to be fault tolerant is different from one that isn't fault tolerant:

57.  What is redundancy?

58.  <u>Explain in detail</u> as you understand it how a Packet-Switched Connection works:

59.  <u>Explain in detail</u> as you understand it how a Circuit-Switched Connection works:

## 1.3.2.3

60.  What is Scalability within a network infrastructure?

## 1.3.2.4

61.  What is Quality of Service (QoS) within a network infrastructure?

## 1.3.2.5

62. What is Security within a network infrastructure?  What are the three primary requirements?

    a.

    b.

    c.

## 1.3.2.6 Activity: Network Architecture Requirements

| | Fault Tolerance | Scalability | Quality of Service | Security |
|---|---|---|---|---|
| 1. Networks should always be available. | | | | |
| 2. Priority queues are implemented when demand for network bandwidth exceeds supply. | | | | |
| 3. Business and personal network equipment must be protected. | | | | |
| 4. Developing a plan for priority queuing is a strategy for quality delivery of information. | | | | |
| 5. Business and personal data must be protected. | | | | |
| 6. Networks can grow or expand with minimal impact on performance. | | | | |
| 7. Data can travel through more than one route for delivery from a remote source. | | | | |
| 8. Common network standards allow hardware and software vendors to focus on product improvements and services. | | | | |

## Chapter 1, Section 4 "The Changing Network Environment"

## 1.4.1.1

63. What are four of the new trends in networking?

a.

b.

c.

d.

## 1.4.1.2

64. BYOD means any _____, with any _____, used _____.

65. Define BYOD to someone who doesn't know:

## 1.4.1.3

66. Using the online text, how is Collaboration defined?

67. From your understanding, give 3 examples of software used for online collaboration:

a.

b.

c.

68. To someone who doesn't know, describe TelePresence (feel free to research online if needed):

## 1.4.1.4

69. Give three scenarios where video communication would help a company be more successful:

    a.

    b.

    c.

## 1.4.1.5

70. What is cloud computing?

71. What are the four primary types of clouds? List and describe:

    a._____ -

    b._____ -

    c._____ -

    d._____ -

## 1.4.2.1

72. Describe Smart Home Technology to someone who doesn't know what it is:

73. Share a Smart Home Technology idea of your own that isn't mentioned in the text"

## 1.4.2.2

74. Describe Powerline Networking to someone who doesn't know what it is:

75. Instead of using Powerline Networking, why not just use wireless technology instead?

## 1.4.2.3

76  What is a Wireless Internet Service Provider (WISP)?

77  Where are WISPs commonly found?

78  Another wireless solution for the home and small businesses is wireless broadband. Explain this technology:

**1.4.3.1**

79  There are two types of network security concerns that must be addressed.  List and explain both.

    a. _____ –


    b. _____ –


80  List and explain the most common external network threats:

    a. _____ -

    b._____ -

    c._____ -

    d._____ -

    e._____ -

    f._____ -

    g._____ -

**1.4.3.2**

81  At a minimum, home or small office network security should include what options?

    a.

    b.

82  What other security options should larger networks include?

a.

b.

c.

d.

## 1.4.3.3

83  Draw a line between the correct term and its definition.

| Firewall | An attack which slows down or crashes equipment and programs |
| --- | --- |
| Zero-Day Attack | Creates a secure connection for remote workers |
| Virus, Worm, or Trojan | Blocks unauthorized access to your network |
| Virtual Private Network (VPN) | Network attack that occurs on the first day that a vulnerability becomes known |
| Denial of Service | Arbitrary code running on user devices |

## 1.4.4.1

84  In one paragraph, explain what Cisco Network Architecture is to someone who doesn't know:

**1.4.4.2**

85  What does a student earning a CCNA certification help the student prepare for?

86  Working in what size business network environment?

87  What does this course you are attending start you on the path towards?

**LAB 1.4.4.3 "Researching IT and Networking Job Opportunities**

**ACTIVITY 1.5.1.1 Draw Your Concept of the Internet Now**

**1.5.1.2 Video "Warriors of the Net"**

**1.5.1.3 Summary**