

Name _____ Date _____

Module 1 – Networking Today

Introduction to Networks – Semester 1

Student Version

Module 1 Sections:

- 1.0 Introduction
- 1.1 Networks Affect our Lives
- 1.2 Network Components
- 1.3 Network Representations and Topologies
- 1.4 Common Types of Networks
- 1.5 Internet Connections
- 1.6 Reliable Networks
- 1.7 Network Trends
- 1.8 Network Security
- 1.9 The IT Professional
- 1.10 Module Practice and Quiz

Required Materials:

Reading Organizer

Packet Tracer Activities: 1.5.7 Network Representation

Labs: 1.9.3 Research IT and Networking Job Opportunities

Module's 1 - 3 Exam

Page intentionally left blank.

Name _____ Date _____

Module 1 – Networking Today

Reading Organizer

Student Version

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

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

- Explain how networks affect our daily lives.
- Explain how host and network devices are used.
- Explain network representations and how they are used in network topologies.
- Compare the characteristics of common types of networks.
- Explain how LANs and WANs interconnect to the internet.
- Describe the four basic requirements of a reliable network.
- Explain how trends such as BYOD, online collaboration, video, and cloud computing are changing the way we interact.
- Identify some basic security threats and solution for all networks.
- Explain employment opportunities in the networking field.

1.1 Networks Affect our Lives

1. Advancements in networking technologies are helping to create a world in which _____, _____, and _____ become less relevant.

2. The internet has changed the manner in which our _____, _____, and _____ interactions occur.

1.2 Network Components

3. What are two other names for hosts?

a.

b.

4. Describe what the term host specifically refers to.

5. Explain what server are.

6. Explain where a peer-to-peer network might be found and how it differs from a larger network.

7. List the advantages of peer-to-peer networking:

- a.
- b.
- c.
- d.

8. The disadvantages of peer-to-peer networking:

- a.
- c.
- d.
- e.

9. An end device is either the _____ or _____ of a message transmitted over the network.

10. Explain the purpose of intermediary devices.

11. Describe the functions intermediary network devices perform.

a.

b.

c.

d.

e.

f.

12. Modern networks primarily use three types of media to interconnect devices. List and describe each.

a. _____

b. _____















c. _____

13. Explain the criteria to consider when choosing network media.

- a.
- b.
- c.
- d.

1.3 Network Representations and Topologies

14. Identify the following network symbols.

a.  _____	b.  _____	c.  _____
d.  _____	e.  _____	f.  _____
g.  _____	h.  _____	i.  _____
j.  _____	k.  _____	
l.  _____		
m.  _____		
n.  _____		

15. Describe the following terms.

a. Network Interface Card (NIC) –

b. Physical Port –

c. Interface –

16. There are two types of topology diagrams. List and describe both.

a. _____ –

b. _____ –

1.4 Common Types of Networks

17. The internet is the largest network in existence. What does the term internet mean?

18. Describe the networks listed below.

a. Small Home Networks –

b. Small Office and Home Office Networks –

c. Medium to Large Networks –

d. World Wide Networks –

19. List how network infrastructures vary.

a.

b.

c.

d.

20. List and describe the two most common types of network infrastructures?

a. _____ –

b. _____ –

21. Describe the specific characteristics of LANs.

a.

b.

c.

22. Describe the specific characteristics of WANs.

a.

b.

c.

23. What is the internet?

24. List three of the organizations that were developed to help maintain the structure and standardization of internet protocols and processes. (The names, not the acronym.)

a.

b.

c.

25. Describe the term Intranet.

26. Describe the term extranet.

1.5 Internet Connections

27. List and describe the options available for home uses to connect to the internet.

a. _____ –

b. _____ –

c. _____ –

d. _____ –

e. _____ –

28. List and describe the options available for business internet connections.

a. _____ –

b. _____ –

c. _____ –

d. _____ –

29. Describe a traditional separate network involving data, phone, and television.

30. Describe a converged network.

1.6 Reliable Networks

31. List the four basic characteristics that network architects must address to meet user expectations:

- a.
- b.
- c.
- d.

32. Describe a fault tolerant network.

33. Implementing a _____ network is one way that reliable networks provide redundancy.

34. A single message, such as an email or a video stream, is broken into multiple message blocks, called _____.

35. Explain what scalability does.

36. _____ becomes a primary mechanism for managing congestion and ensuring reliable delivery of content to all users.

37. When does congestion occur?

38. How is network bandwidth measured?

39. What do devices do when the volume of traffic is greater than what can be transported across the network?

40. What are the two types of network security concerns network administrators must address?

a.

b.

41. What two things does securing the network infrastructure include?

a.

b.

42. Along with securing the network infrastructure what must network administrators also protect?

a.

b.

43. List and describe the three primary requirements to achieve the goals of network security?

a. _____ –

b. _____ –

c. _____ –.

1.7 Network Trends

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

45. Define collaboration.

46. What three things is video used for?

a.

b.

c.

47. What does cloud computing allow us to do?

48. Why do only large organizations use privately built data centers to house their data and provide services to users?

49. Explain how smaller organizations handle cloud computing and data storage?

50. What are three reasons why cloud providers would store data in distributed data centers instead of storing all the data of a person or an organization in one data center?

a.

b.

c.

51. List and describe in detail the four primary types of cloud.

a. _____ –

b. _____ –

c. _____ –

d. _____ –

52. Explain what smart home technology is.

53. Define powerline networking.

54. Where is powerline networking is especially useful?

55. Is Powerline networking a good substitute for dedicated cabling in data networks?

56. Describe how a Wireless Internet Service Provider (WISP) operates.

57. Explain how Wireless Broadband Service works.

1.8 Network Security

58. Securing a network involves _____, _____, _____, _____, and _____ in order to protect data and mitigate threats.

59. List and explain the common external threats to networks.

a. _____ –

b. _____ –

c. _____ –

d. _____ –

e. _____ –

f. _____ –

g. _____ –

60. There have been many studies that show that the most common data breaches happen because of internal users of the network. List what this can be attributed to.

a.

b.

c.

61. No single solution can protect the network from the variety of threats that exist. Explain how and why security should be implemented.

62. List and explain the basic security components for a home or small office network.

a. _____ –

b. _____ –

62. Network security implementation for a corporate network usually consists of many components built into the network to monitor and filter traffic. List and explain the security requirements shown in the curriculum.

a. _____ –

b. _____ –

c. _____ –

1.9 The IT Professional

63. What is the certification exam you will be taking at the end of this three semester program?