Networking

Network Fundamentals

3.1.1 Identify different types of networks.

1. Describe the following networks: LAN, WAN, VLAN, SAN, VPN, PAN, AND P2P.

3.1.2 Outline the importance of standards in the construction of networks.

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3.1.3 Describe how communication over networks is broken down into different layers.

3. What is the purpose of the OSI Model?

4. Draw a diagram of the OSI Model showing how data flows through the seven layers.

3.1.4 Identify the technologies required to provide a VPN.

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3.1.5 Evaluate the use of a VPN.

6. Evaluate the use of a VPN.

Data Transmission

3.1.6 Define the terms: protocol, data packet.

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3.1.7 Explain why protocols are necessary.

8. Define the following terms: data integrity, flow control, deadlock, congestion, and error checking.

9. Explain why protocols are necessary.

3.1.8 Explain why the speed of data transmission across a network can vary.

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3.1.9 Explain why compression of data is often necessary when transmitting across a network.

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3.1.10 Outline the characteristics of different transmission media.

	Metal Conductor	Fiber Optics	Wireless
Speed			
Reliability			
Cost			
Security			

3.1.11 Explain how data is transmitted by packet switching.

13. Explain how data is transmitted by packet switching.

Wireless Networking

3.1.12 Outline the advantages and disadvantages of wireless networks.

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3.1.13 Describe the hardware and software components of a wireless network.

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3.1.14 Describe the characteristics of wireless networks.

16. Describe the characteristics of the following wireless networks: WIFI, WIMAX, LTE, and LTE-Advanced.

17. What are 3G and 4G mobile networks?

3.1.15 Describe the different methods of network security.

18. Describe encryption, authentication, and MAC address filtering.

3.1.16 Evaluate the advantages and disadvantages of each method of network security.

19. Evaluate the effectiveness of encryption, authentication, and MAC address filtering as they relate to wireless networking.