1. Identify the five components of a data communications system.
2. What are the advantages of distributed processing?
3. What are the three criteria necessary for an effective and efficient network?
4. What are the advantages of a multipoint connection over a point-to-point connection?
5. What are the two types of line configuration?
6. Categorize the four basic topologies in terms of line configuration.
7. What is the difference between half-duplex and full-duplex transmission modes?
8. Name the four basic network topologies, and cite an advantage of each type.
9. What are some of the factors that determine whether a communication system is a LAN or WAN?
10. Why are protocols needed?
11. Why are standards needed?
12. What is the maximum number of characters or symbols that can be represented by Unicode?
13. Assume six devices are arranged in a mesh topology. How many cables are needed? How many ports are needed for each device?
14. For each of the following four networks, discuss the consequences if a connection fails.
    1. Five devices arranged in a mesh topology
    2. Five devices arranged in a star topology (not counting the hub)
    3. Five devices arranged in a bus topology
    4. Five devices arranged in a ring topology
15. You have two computers connected by an Ethernet hub at home. Is this a LAN, a MAN, or a WAN? Explain your reason.
16. In the ring topology, what happens if one of the stations is unplugged?
17. In the bus topology, what happens if one of the stations is unplugged?
18. Draw a hybrid topology with a star backbone and three ring networks.
19. Draw a hybrid topology with a ring backbone and two bus networks.
20. When a party makes a local telephone call to another party, is this a point-to-point or multipoint connection? Explain your answer.