1. (10 pts.) Compare distance ranges and data rates for traditional Local Area Networks (LANs) and traditional Wide Area Networks (WANs).

2. (10 pts.) Name main applications of LANs and Metropolitan Area Networks (MANs).

3. (15 pts.) Compare Nonreturn-to-Zero-Level (NRZ-L) and Manchester codes for generating the following digital data string: 110101110110?

4. (15 pts.) Differentiate between guided media and unguided media.

5. (15 pts.) What is the difference between OSI and TCP/IP layered models? Give at least two examples of ports in the TCP/IP model.

6. (10 pts.) What is a router?

7. (10 pts.) Briefly describe a relationship between medium and network topology. Give a few examples.

8. (15 pts.) Name potential ring-architecture problems. What is a timing jitter?