

## WAN Technologies

### T1/E1 and T3/E3/DS3

**1. A T1 line employs what type of multiplexing?**

- Time-Division Multiplexing

**2. When entering a building, what type of media does a T1 line most likely use?**

- Twisted Pair Copper Cabling

**3. With what type of media would a T3 likely use when it enters a building??**

- Coaxial

### Satellite, ISDN, Cable, DSK, and Dialup

**1. How does the cost of non-terrestrial communications compare with conventional terrestrial networking?**

- Non-terrestrial is typically more expensive

**2. Other than cost, what is the significant disadvantage of satellite communications?**

- High Latency, "Rain Fade", a need for Line of Site

**3. What does the A in "ADSL" represent?**

- Asymmetric

**4. What type of media would an ADSL use when it enters a building?**

- Standard phone lines

**5. What type of DSL is capable of speeds of up to 100Mbit/s?**

- VDSL (Very High Bitrate DSL)

### **Circuit Switching and Packet Switching**

**1. Which technology, circuit or packet switching, is most like the technology utilized by POTS?**

- Circuit Switching

**2. What is the major criticism of circuit switching?**

- The inefficient use of resources because no one else can use your connection.

**3. Why is packet switching considered more efficient than circuit switching?**

- The bandwidth can be adjusted so some can pay for more bandwidth if need be

### **Transmission Media, Speed, and Distance**

**1. What are the three major WAN cable types?**

- Coaxial, Twisted Pair and Fiber Optic cabling

**2. When was coax cable patented?**

- 1880

**3. What type of cable is typically used in a local area network?**

- Twisted Pair Copper Cabling

**4. What purpose does the twist in TWP copper cable serve?**

- Electromagnetic interference cancellation

**5. What type of cabling would you use for very long distance and very high speed runs?**

- Fiber Optic

**6. When you use fiber optic cables, what are two conventional cabling operations that require extra care?**

- They must be terminated properly and you must be careful of the bend radius as to not bend too far to break the cable.