



Questo's Questions

1.4 - The Internet:

1. Compare the *differences* between *copper and fibre optic cables* (possibly in a table) by the following features:

- a. Price
- b. Bandwidth
- c. Interference
- d. Attenuation
- e. Malleability / Fragility [2 each]

2. Describe each of the different types of *wireless connection*. Try to list 1 *advantage* and 1 *disadvantage* of using each type.

- a. Bluetooth
- b. Microwave
- c. Satellite
- d. GSM / 5G [5 each]

3a. State the 6 *characteristics* of a network. [6]

3b. *Describe* what is meant by the following *characteristics*:

- i. Latency
- ii. Bandwidth
- iii. Contention [1 each]

1. Compare the differences between copper and fibre optic cables:

a. Price:

Copper Cables: Cheaper

Fibre Optic Cables: More expensive

b. Bandwidth:

Copper Cables: Lower bandwidth

Fibre Optic Cables: Higher bandwidth

c. Interference:

Copper Cables: Susceptible to electromagnetic interference

Fibre Optic Cables: Not affected by electromagnetic interference

d. Attenuation:

Copper Cables: More likely to suffer from attenuation

Fibre Optic Cables: Less susceptible to attenuation

e. Malleability/Fragility:

Copper Cables: Malleable, less likely to break

Fibre Optic Cables: More fragile

2. Describe each of the different types of wireless connection:

a. Bluetooth:

Advantage: No additional hardware required for connection.

Disadvantage: Limited range (about 10 meters).

b. Microwave:

Advantage: Can transmit a large amount of data.

Disadvantage: Requires a direct line of sight between antennas; affected by bad weather.

c. Satellite:

Advantage: Covers large areas; point-to-multipoint communication.

Disadvantage: Significant delay due to distance (about 45,000 miles).

d. GSM / 5G:

Advantage: Allows mobile phones to connect for calls and text messages.

Disadvantage: Limited speed in earlier generations; 5G requires extensive infrastructure.

3a. State the 6 characteristics of a network:

1. Strength
2. Latency
3. Storage Capacity
4. Range
5. Bandwidth
6. Contention

3b. Describe what is meant by the following characteristics:

- i. **Latency:** The delay when sending data across a network.
- ii. **Bandwidth:** The maximum amount of data that can be sent across a network at once.
- iii. **Contention:** Refers to whether a network is dedicated (uncontended) or shared between users (contended).