

**PENANG SANGAM HIGH SCHOOL
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LESSON NOTES 7

Year/Level: 12 Subjects: Computer Studies

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| Strand: | Computer and Applications |
| Sub-strand: | CE 12.1.5 Communications and Networks |
| Content Learning Outcome: | <ul style="list-style-type: none">❖ Communication and connectivity❖ Communication system (Sending and receiving devices, Communication channels) |

Lesson Notes

Communications and connectivity

- ❖ Computer communications is the process of sharing data, programs, and information between two or more computers.
- ❖ Connectivity is a concept related to using computer networks to link people and resources.
- ❖ A communication system is made of four elements
 1. Sending and receiving devices
 2. Communication channels
 3. Connection devices
 4. Data transmission specification

1. Sending and receiving devices

- ❖ Are simply computers, mobile devices such as PDAs, iPad, iPhone, tablets, mobile phones that transmit data to each other

2. Communication channels

- ❖ Is the actual medium through which data gets transmitted from one device to another
- ❖ This medium can be physical or wireless.

Physical mediums

- ❖ Are actually wires/cables used to connect two or more devices such as twisted pair, coaxial and fiber-optic cables

Twisted pair cables

- ❖ Are usually referred to as telephone lines and at 5/6 cables.
- ❖ It is called twisted pair because it consists of thin strands of intertwined copper wires

Coaxial cable

- ❖ Has a solid copper core in the middle which is Twisted Pair insulated thick rubber coating
- ❖ Coaxial cables are usually used for transmitting television signals as well as connect computers.
- ❖ It is approximately 80 times faster in transmitting data than a twisted pair.

Fiber-optic cable

- ❖ Is usually used as a backbone cable for extremely high speed data transfer.
- ❖ It transmits data as pulses of light through tiny tubes of glass.
- ❖ Since fiber-optic cable uses pulses of light, it is capable of transmitting data approximately 26,000 times than the twisted pair.

Wireless mediums

- ❖ Are connections that do not use any physical wires/cables, instead it uses radio frequency, microwave, satellite and infrared to transmit data over the air
- ❖ Radio frequency (RF) uses radio signals to communicate between wireless devices.
- ❖ The radio frequency standards are known as Bluetooth, Wi-Fi and WiMax. Bluetooth is a short range RF communication that can transmit data in any direction within ten metres.

Wi-Fi (Wireless Fidelity)

- ❖ Also uses RF to communicate over short distances.
- ❖ It is based on certain standard and each standard has a different transmission speed (11Mbps – 600Mbps).

WiMax (Worldwide Interoperability for Microwave Access)

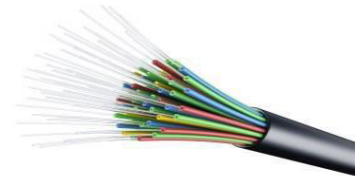
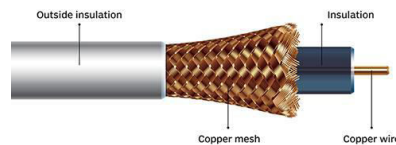
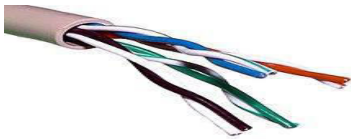
- ❖ simply extends the distance offered by Wi-Fi

Microwave

- ❖ uses high frequency radio waves and requires line of sight access between the two communicating devices similar to infrared

Question

- 1) Name the type of cable shown below



- 2) State advantage and disadvantage of physical or wireless medium?