

**LESSON NOTES 11**

**Year/Level: 13      Subjects: Computer Studies**

<b>Strand:</b>	CE 2 Computers and Application
<b>Sub-strand:</b>	CE13.2.1 Hardware, Software Installation and Basic Networking
<b>Content Learning Outcome:</b>	❖ Fundamentals of Network Communication <ul style="list-style-type: none"><li>• Cables</li><li>• How two computers communicate</li></ul>

**Lesson Notes**

**Straight Cable**

You usually use straight cable to connect *different* type of devices. This type of cable will be used most of the time and can be used to:

- ✓ Connect a computer to a switch/hub's normal port.
- ✓ Connect a computer to modem's LAN port.

**Crossover Cable**

Sometimes you will use crossover cable, it's usually used to connect *same* type of devices. A crossover cable can be used to:

- ✓ Connect 2 computers directly.
- ✓ Connect a router to a switch/hub's normal port.
- ✓ Connect 2 switches together.

**How Two Computers Communicate**

- ✓ Computers connect to each other to transmit data between them and communicate with each other using the **TCP/IP (Transmission Control Protocol / Internet Protocol)**.
- ✓ TCP/IP uses 2 addresses to identify devices on a network:
  - ✚ IP address is a unique address that computing devices such as personal computers, tablets, and smartphones use to identify itself and communicate with other devices in the IP network. An IPv4 address is a 32-bit address that is generally denoted as **w.x.y.z**.
  - ✚ MAC address is a unique 6-byte address that is burned into each network Interface card.

Examples of IP Address

10.0.10.5

192.168.10.45

Examples of MAC Address:

00:D0: BA: 17:34: AD

00:02:17:59:82:63

**Example**

Study the diagram below and answer question as follow

```
Connection-specific DNS Suffix . :  
Link-local IPv6 Address . . . . . : fe80::755f:d23e:bd8f:8660%7  
IPv4 Address. . . . . : 192.168.207.225  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . : 192.168.207.17
```

- I. State the IP address  
192.168.207.225

**Questions**

- 1) Differentiate between straight-through and crossover cables
- 2) What is the purpose of IP address?