COMPUTER STUDIES NOTES

FORM 1

**CD-ROMs -  Excellent Media for Software Distribution**

**Background Information**

The learner should have background knowledge of the following:

1. Computer hardware
2. Computer software
3. Setup and cabling
4. Read the advertisement of a computer sale below and drag the specifications into their corresponding hardware considerations

**Hardware considerations**

To buy hardware one needs to consider the following:

1. Processor
2. Memory capacity
3. Upgradeability
4. Compatibility
5. Cost
6. User needs
7. Warranty
8. Service support

The decision to select a particular processor depends on the number of available processors from different manufacturers including: Intel, AMD and Cyrix. Intel has two versions i.e. intel and intel celeron. Intel celeron are cheaper because they have less registers.   
Processors are of different speeds e.g. an Intel Pentium IV has a speed of 3GHz. The speed of the processor gives it its power. The higher the speed, the more powerful the computer.   
Therefore when selecting a computer/processor, you may consider the manufacturer, cost and the processor speed.  
  
**Memory capacity**

Other than the processor speed, the processing power of the computer is also determined by memory capacity. the bigger the memory capacity, the faster the processing power.   
It is advisable to acquire the right capacity of memory because there are certain software that require a certain minimum amount of memory to run comfortably. For example to run windows XP Microsoft recommends 128Mb of RAM.  
128mb Memory Chip   
  
**SIMM**  
**DIMM**

**Upgradeability**

This is the ability to attach specific parts and install more software in order to have more processing power.   
Due to rapid change in technology, some computer devices may be rendered obsolete. Therefore there is need to acquire a computer that is easily upgradeable.

**FLASH MEMORIES**  
**Flash memories** are compact, flexible type of storage. They are a variation of computer memory chips that are used to simulate main memory and to supplement or replace hard disk drives for permanent data storage.  
  
**Hard disks** are thin rigid metal or glass platters covered with a substance that allows data to be held on magnetised spots. They are usually tightly sealed within an enclosed unit to prevent any foreign matter such as dust or smoke particles from getting inside.  
  
**External hard disks**

If you don't have room in the system unit for another internal hard disk but need additional storage, then you can use an external hard disk that can be connected to the computer the same way you would connect any peripheral device.  
  
**Removable hard disks**Removable hard disks (hard disk cartridges) consist of one or more platters enclosed along with the read/write heads in a hard plastic case. This case is inserted into a drive connected to the computer. Examples of removable hard disks include; jaz cartridges which can hold 2 GB or more and zip cartridges which can hold more than 100 MB.

1. Describe types of cables
2. Describe types of ports
3. Describe basic computer set up and cabling

**Basic Computer Set up and Cabling**

In this lesson, we shall learn more about types of cables, power cables, interface or Data cables and connections

**Connecting Computer Components**

*Factors to consider before assembling a computer:*

Switch off main power supply and disconnect all cables .  
Ensure you have all the necessary tools i.e a set of screw drivers, electrical pliers etc.  
Have the installation manual at hand  
Do not work without supervision or guidance  
When assembling a computer, there are a number of things that you should never do:   
Force cables into ports  
Touch exposed electronic part  
Change the voltage ratings from 240V to any other.  
never work alone in case of any emergency.

**Things that you should do**

Follow the instructions from the manual.  
All the connections must be firm e.g power cables  
Discharge static electric from your body by wearing anti-static wrist member.

**Types of Cables**

Cables are divided into two broad categories namely:

1. Power cables
2. Interface cables.

Interface/Data cables and Ports  
There are three types of interface cables and ports namely:

1. Parallel Cables
2. Serial Cables
3. Universal Serial Board (USB)

**Parallel Cables and Ports**

Parallel cables transmit data/information simultaneously i.e. they transmit 8 bits at the same time. The main advantage of these cables is that they transmit data faster than serial cables. They are mainly used for connecting printers and removable storage drives e.g. zip drives.

Parallel ports connect parallel cables to the motherboard. A parallel port has 25 holes. This type of port is known as a female connector. A computer internally labels each parallel port with the letters LPT. The first parallel port is named LPT1, the second parallel port is named LPT2, and so on.   
  
**Example of a Parallel port**

**Serial Cables and Ports**

Serial cables transmit data/information one bit at a time. They are slower than parallel cables but more reliable. They are used to connect devices such as mice, keyboard and serial printers.

A serial port has either 9 or 25 pins. This type of port is known as a male connector. The computer internally labels each serial port the letters COM. The first serial port is named COM1, the second serial port is named COM2, and so on.   
  
**Example of a Serial port**

**Universal Serial Bus (USB) cables and Ports**

USB is a multi purpose type of port that allows one to connect up to 127 devices using only one port. For example, you can use the same port to connect a printer, joystick, scanner, mouse and keyboard to your computer. other advantages of USB ports are:

1. The transmission of data is fast
2. It is a plug and play (PnP) compliant.

**USB Port**  
USB Cable   
Fire wire

Fire wire is a high speed low cost serial bus system designed to provide efficient transfer of data between a peripheral device and a computer. It allows camcorders, scanners, disk drives, DVD players, CD–ROMS and printers to share a common connecting bus.

1. It is a high speed serial bus that supports more than 63 devices
2. Fully supported by Windows 98 onwards

**Fire Wire Cable**

**INFRARED (IrDA) Ports**

These are data transfer ports that use wireless technology for connecting devices such as keyboards, mice and printers. This type of connection uses a certain frequency of radio waves to transmit data and it requires an unobstructed line of sight between the transmitter and the receiver.

**Small Computer System Interface (SCSI) Port**

This port and interface cables transmit data in parallel but are faster than parallel cables.   
SCSI port allows connection of more than 8 peripheral devices linked together in what is called a daisy chain along an extended cable. These devices include external hard disk drives, magnetic tape units, scanners and CD-ROM drives.  
  
**6-Pin/PS-2 ports**

Earlier computers used the 5 – pin DIN for connecting the keyboards but this has now been replaced by the 6 – pin mini DIN known as PS-2  
5-Pin DIN cable

**6-Pin port**

**Monitor (Video Adapter) Ports**

These ports are used to connect the monitor to the video adapter card inside the system unit. The two most common connectors used for monitors are the 9 pin D and the 15 pin D. The pins must be compatible with the number of holes in the video adapter card.  
  
**Power cables**

These cables supply power to the computer's power supply unit. From the power supply unit, electric current is converted from Alternating current (A.C) to Direct current (D.C) then redistributed to other internal devices   
power cable   
power supply unit   
Interface/Data cables

These are wires which connect the peripheral devices to the motherboard through ports. The interface cables transmit data signals. A port is a socket on the motherboard that is connected by a bus to peripheral devices such as a monitor or a printer so that it can communicate with the computer system.  
  
**Connecting basic computer peripherals**

The following rules should be observed before you carry out setup activity:

1. Disconnect all devices from power
2. Discharge static electricity that might have built up on the hands by touching an earthed metallic object or wearing an anti-static wrist strap.

*Parallel cable   
  
Serial cable   
  
USB cable*When acquiring computer hardware and software resources you need to make a number of considerations. In this lesson, we are going to discuss some of the factors to consider.   
By the end of the lesson, you should be able to:

1. Identify hardware specifications when acquiring computer hardware.
2. Identify factors to consider when acquiring computer software.

Selecting a Computer System  
In this lesson, we shall learn how to select a computer system by considering hardware and software   
By the end of the lesson, you should be able to :

1. Identify hardware specifications when acquiring computer hardware.
2. Identify factors to consider when acquiring computer software.