**Module 1 [Hardware and its components]**

Topic: The Visible Computer

**• Assignment Level Basic**

1. What is hardware?

Ans- The external and internal devices and equipment that enable you to perform major functions such as input, output, storage, communication, processing, and more.

1. What is the purpose of Hardware?

Ans Hardware refers to the external and internal devices and equipment that enable you to perform major functions such as input, output, storage, communication, processing, and more.

**• Assignment Level Intermediate**

1. list out two types of hardware?

Ans There are two types of computer hardware external and internal. External hardware devices include monitors, keyboards, printers, and scanners, whereas internal hardware devices include motherboards, hard drives, and RAM.

**•Assignment Level Advance**

1. What is core hardware

Ans The core hardware refers to the minimum hardware required to run an application. A core hardware can be referred to as the core of a CPU

2.Do a practical of identifying hardware

Ans Done

Topic: Category of components

**•Assignment Level Basic**

1. What are the category of components in hardware?

Ans There are five main hardware components in a computer system: Input, Processing, Storage, Output and Communication devices.

1.Why category is needed

Ans-

* Input devices: For raw data input.
* Processing devices: To process raw data instructions into information.
* Output devices: To disseminate data and information.
* Storage devices: For data and information retention.

**•Assignment Level Intermediate**

* 1. Do a practical to identify the components in which category they come.

Ans Done

Topic: Input Device

**• Assignment Level Basic**

1. What is input device?

Ans An input device is a piece of equipment used to provide data and control signals to an information processing system, such as a computer or information appliance

2.Why input device needed?

Ans The purpose of an input device is to enable computer operators to have control of the computer and send data such as text, images, or sounds to the computer

**•Assignment Level Intermediate**

1 .List out the input device

Ans- Input Device

* Keyboard,
* Mouse.
* Joy Stick.
* Light Pen.
* Microphone.
* Scanner.
* Barcode Reader.

2.Do a practical to identify input device and describe how it works.

Ans- Done.

Topic: Output Device

**• Assignment Level Basic**

1 What are output device?

Ans Output Device Definition: A piece of equipment/hardware which gives out the result of the entered input, once it is processed  is called an output device.

2.how does output device work?

Ans The computer processes the input and then sends a new signal to the output device

**•Assignment Level Intermediate**

1.List out the output device.

Ans Examples include monitors, printers, speakers, headphones, projectors, GPS devices, optical mark readers, and braille readers

2.Do a practical to identify the output device and describe its working process.

Ans Done

Topic: Motherboard

**• Assignment Level Basic**

* 1. What is motherboard?

Ans A motherboard is the main printed circuit board in a computer. The motherboard is a computer's central communications backbone connectivity point,

* 1. Why it is called motherboard?

Ans It's called a motherboard because it's the main circuit board. Much like the term “mothership," the word motherboard signifies its essential nature

**• Assignment Level Intermediate**

1.What it is called if we remove all components from the motherboard?

Ans He motherboard is the main body of a computer. Over time, computer components degrade and may need to be replaced. Replacing the motherboard can help make a computer run more quickly, smoothly and without errors.

1. Describe types of motherboard

Ans- Advanced Technology extended (ATX) It is a type of motherboard that was developed and patented by Intel in the year 1995.

* AT Motherboards.
* Balance Technology Extended (BTX)
* Mini ITX Motherboard.
* LPX (Low Profile extension)

**• Assignments level Advance**:

1.Do a practical by identifying parts of motherboard.

Ans- Done

2.Do a practical by describing the data flow in motherboard

Ans- Done

1. Do a practical by removing all removable parts from the motherboard

Ans- Done

Topic: CPU

**• Assignment Level Basic**

* 1. What is CPU.

Ans- the primary component of a computer that acts as its “control center.

2.Write the full form of CPU

Ans- CentralProcessingUnit.

**•Assignment Level Intermediate**

* 1. What are the types of CPU?

Ans including single-core, dual-core, Quad-core, Hexa-core, Octa-core, and Deca-core processors,

* 1. What do we need to keep the CPU Healthy?

Ans-

* Restart your computer at least once a week.
* Hygiene your Programs.
* Defrag your hard drive.
* Investigate Startup programs.
* Install Antivirus Software.
* Use an Anti-Surge Protection Extension.
* Back-Up Your Files.

**• Assignment Level Advance**

1. Do a practical to remove processor and apply thermal paste in it and install it again.

Ans- Done

1. Do a practical to Identify CPU and its Sockets.

Ans- Done

Topic: Monitor

**• Assignment Level Basic**

* 1. What is Monitor?

Ans A monitor is an electronic output device that is also known as a video display terminal (VDT) or a video display unit (VDU). It is used to display images, text, video, and graphics information

**• Assignment Level Intermediate**

1. List out the types of monitor.

Ans-

* Cathode Ray Tube (CRT) Monitors.
* Flat Panel Monitors.
* Touch Screen Monitors.
* LED Monitors.
* OLED Monitors.
* DLP Monitors.
* TFT Monitors.
* Plasma Screen Monitors.

1. Do a practical to identify monitor Technology.

Ans- Done

1. What are the Technologies used in monitor.

Ans Major technologies are CRT, LCD and its derivatives (Quantum dot display, LED backlit LCD, WLCD, OLCD), Plasma, and OLED and its derivatives (Transparent OLED, PMOLED, AMOLED).

**• Assignment Level Advance**

* 1. Describe how does the Crt monitor works.

Ans CRTs Are Lit Using Electron Beams The CRT in a TV is a glass vacuum tube. The inner surface of the screen is coated with tiny phosphor dots that emit light in the three primary colors (red, green, and blue). These phosphor dots glow when struck by an electron beam, resulting in the images we see on screen.

Topic: system bus

**• Assignment Level Basic**

1.What is system bus

Ans A system bus is a facet of computer architecture that transmits and shares data throughout the computer and between devices.

**•Assignment Level Intermediate**

1. List out the types of system bus.?

Ans Three types of bus are used.

* Address bus - carries memory addresses from the processor to other components such as primary storage and input/output devices. ...
* Data bus - carries the data between the processor and other components. ...
* Control bus - carries control signals from the processor to other components.

1. Describe the working of system bus.

Ans A system bus is a facet of computer architecture that transmits and shares data throughout the computer and between devices.

1. Do a practical to identify the system bus.

Ans- Done

Topic: Chipset

**• Assignment Level Basic**

* 1. What is chipset

Ans  A chipset is a set of electronic components on one or more ULSI integrated circuits known as a "Data Flow Management System" that manages the data flow between the processor, memory and peripherals.

**• Assignment Level Intermediate**

1. What are the types of Chip set?

Ans There are two main chipsets: the northbridge and the southbridge.

1. Which chipset does have direct contact with the cpu.

Ans The northbridge is directly connected to the CPU,

3.Do a practical to identify the chipset

Ans- Done

**• Assignment Level Advance**

1. Describe how does the Northbridge chipset work

Ans North Bridge is bridge that manages communication between Central Processing Unit (CPU) and parts of motherboard. After CPU, North Bridge chip is essentially main component of motherboard and is only motherboard circuit besides CPU that normally runs at full processor bus speed.

Topic: Memory

**• Assignment Level Basic**

1.What is memory?

Ans-Memory refers to the psychological processes of acquiring, storing, retaining, and later retrieving information.

2.What are the types of memory

Ans A computer contains two types of memory: primary (volatile) and secondary (non-volatile). Primary memory (RAM and ROM) allows quick data access and temporary storage for running programs, while secondary memory (HDDs, SSDs, etc.)

**• Assignment Level Intermediate**

1. Describe memory in detail.

Ans- Memory is the process of taking in information from the world around us, processing it, storing it and later recalling that information, sometimes many years later.

1. What are memory types.

Ans There are at least four general types of memory:

* working memory.
* sensory memory.
* short-term memory.
* long-term memory.

**• Assignment Level Advance**

* 1. Do a practical to identify memory types.

Ans-Done

* 1. Do a practical to install memories in system

Ans-Done

* 1. Do a practical to identify main memory frequencies.

Ans- Done

Topic: System Unit

**• Assignment Level Basic**

1. What is System Unit?

Ans A system unit is the part of a computer that houses the primary devices that perform operations and produce results for complex calculations.

**• Assignment Level Intermediate**

1. How does system unit work?

Ans The primary function of the computer system unit is to hold all the other components together and protect the sensitive electronic parts from the outside elements.

1. What are the components and system unity?

Ans- Specifically, a Camera Component, a GUI Layer, a Flare Layer, and an Audio Listener

**• Assignment Level Advance**

1. Do a practical to identify system unit.

Ans- Done

1. Do a practical to assemble and disassemble system unit.

Ans- Done

Topic: BIOS

**• Assignment Level Basic**

1. What is bios.

Ans- BIOS, in full Basic Input/Output System, computer program that is typically stored in EPROM and used by the CPU to perform start-up procedures when the computer is turned on.

**• Assignment Level Intermediate**

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1. What is the full form of bios

Ans Basic Input Output System

1. Describe working process of BIOS

Ans program a computer's microprocessor uses to start the computer system after it is powered on.

**• Assignment Level Advance**

1. Do a practical to reset bios when system is on.

Ans- Done.

1. Do a practical of Hard resetting the BIOS.

Ans- Done.

1. Do a practical of identifying BIOS chip from the

Motherboard

Ans- Done.

Topic: CMOS

**• Assignment Level Basic**

1.What is CMOS?

Ans The term usually used to describe the small amount of memory on a computer motherboard that stores the BIOS settings.

**• Assignment Level Intermediate**

1.What is the full form of CMOS?

Ans- A complementary metal-oxide semiconductor

1. Describe the working process of CMOS.

Ans CMOS works through an interplay between two transistors - an N-Channel MOSFET and the P-channel MOSFET

**• Assignment Level Advance**

1Do a practical of identifying cmos.

Ans- Done

2Do a practical of installing cmos

Ans- Done

3.How do we know that cmos is not working.

Ans The most common symptom of CMOS battery failure is incorrect or slow system date and time in the BIOS, loss of BIOS settings when the computer is powered off, time-of-day clock stopped error message

Topic: Boot process

**• Assignment Level Basic**

1.What is Boot Process?

Ans- The process of booting involves turning on a computer.

**• Assignment Level Intermediate**

1. What is the first process of boot?

Ans First, the CPU runs an instruction in memory for the BIOS

2.What is the final stage in the boot process?

Ans the last stage, full control of hardware and machine is granted to the OS so that it can look after all the operations.

1. Describe the boot process in Linux?

Ans Firmware initialization, execution of a boot loader, loading and startup of a Linux kernel image, and execution of various startup scripts and daemons.

**• Assignment Level Advance**

1. Describe about working with the grub bootloader.

Ans Once you select the operating system to boot into, GRUB will load the selected kernel. GRUB uses kernel parameters to know where the kernel is located and other important parameters to use. initrd: Used for specifying the initial RAM disk. BOOT\_IMAGE: The location of the Linux kernel

1. Describe working process of boot loader.

Ans he first task is to load the main memory, which is essential for the processor to work. In the second step, the bootloader loads the kernel of the operating system, that is, the primary component of the system software that controls all storage and processor permissions and contains all important drivers.

Topic: SMPS

**• Assignment Level Basic**

1. What is SMPS?

Ans SMPS is Switched Mode Power Supply also known as Switching Mode Power Supply. SMPS is an electronic power supply system that makes use of a switching regulator to transfer electrical power effectively.

2.What is the process of SMPS?

Ans- SMPS Operation Diagram

In the first stage, the incoming AC power runs through a rectifier and undergoes filtration to produce DC.

The SMPS works at high frequencies, so a high-frequency switch processes the DC signal, which creates a high-frequency pulsating DC signal

**• Assignment Level Intermediate**

1. DO a practical to install SMPS.

Ans- Done

1. How many sata connectors are there in normal smps?

Ans Therefore nowadays all the SMPS comes with 24 pin detachable connector (20 + 4) that can be split into 20 pin and 4 pin cables. CPU 4 + 4 Pin Connector.

**• Assignment Level Advance**

1. Do a practical to troubleshoot a smps without plugging it to the system.

Ans- Done

1. How many pins does atx power connector have?

Ans It is a connector that supplies electricity to a computer system's components. The 24-pin ATX-style connector supplies electricity to the motherboard and other parts of the computer system. As a component of their Advanced Technology Extended (ATX) motherboard.

Topic: RAM

**• Assignment Level Basic**

1. What is RAM?

Ans In essence, RAM is your computer or laptop's short-term memory. It's where the data is stored that your computer processor needs to run your applications and open your files.

1. What is the full form of RAM?

Ans random-access memory.

**•Assignment Level Intermediate**

1.What are the types of RAM ?

Ans- There are two main types of RAM: Dynamic RAM (DRAM) and Static RAM (SRAM).

2.Do a practical to identify RAM.

Ans- Done

**• Assignment Level Advance**

1. Do a Practical to identify ram and install it in a proper system.

Ans- Done

Topic: Device and cable

**• Assignment Level Basic**

1. What are the types of devices?

Ans- Input devices are types of peripheral devices. Output devices, which accept data from a computer, includes display monitors, printers, speakers, headphones, and projectors. Output devices are types of peripheral devices.

1. What are the types of cable?

Ans Cables are classified into 5 types depending upon their purpose as follows:

* Ribbon Electric Cables. It consists of multiple insulated wires running parallel with one another and is used for transmission of multiple data simultaneously. ...
* Shielded Cables. ...
* Twisted Pair Cables. ...
* Coaxial Cables. ...
* Fibre Optics Cable.

**• Assignment Level Intermediate**

* 1. What cables are used to connect printer?

Ans  The majority of printers are compatible with a USB 2.0 A/B cable. The "A" side of the cable plugs into the USB port on your computer and the "B" side plugs into the back of the printer.

* 1. What was the first cable founded by Apple for data transfer?

Ans- Lightning to USB Cable You can connect iPhone to a power outlet using a compatible power adapter (sold separately) and the included cable. You can also connect the included cable to your computer's USB port for charging, transferring files, and more

• Assignment Level Advance

1.Do a practical to identify the sata cables.

Ans- Done

2.Do a practical to identify and install the cables in the system.

Ans- Done

Topic: Expansion card and slots

**• Assignment Level Basic**

1. Why expansion card needed?

Ans , The primary purpose of an expansion card is to provide or expand on features not offered by the motherboard. For example the original IBM PC did not have on-board graphics or hard drive capability.

1. Why expansion slots needed?

Ans Computers have expansion slots to give the user the ability to add new devices to their computer. For example, a computer gamer may upgrade their video card to get better performance in their games. An expansion slot allows them to remove the old video card and add a new video card without replacing the motherboard.

**• Assignment Level Intermediate**

1. What are the types of expansion card?

Ans Types of expansion cards in a computer Interface card (ATA, Bluetooth, EIDE (enhanced integrated drive electronics), FireWire, IDE (integrated development environment), parallel, RAID (redundant array of independent disks SCSI small computer system interface s erial and USB universal serial bus

**• Assignment Level Advance**

1. Do a practical to identify the types of expansion slots

Ans- Done

1. Do a practical to install the Graphics card.

Ans- Done

1. Do a practical to install LAN card Topic: I/O Ports

Ans- Done

**• Assignment Level Intermediate**

1. What is I/O ports?

Ans- Input /Output port An I/O port is a socket on a computer that a cable is plugged into. The port connects the CPU to a peripheral device via a hardware interface or to the network via a network interface.

2.List out the I/O ports available

Ans- Some important types of ports are as per follows:

* Serial Port: Used for external modems and older computer mouse.
* Parallel Port : Used for scanners and printers
* Universal Serial Bus (or USB) Port
* Firewire Port
* Ethernet Port

3.Do a practical to identify the I/O ports.

Ans- Done

Topic: BIOS & CMOS

**• Assignment Level Basic**

* 1. What is BIOS?

Ans BIOS, in full Basic Input/Output System, computer program that is typically stored in EPROM and used by the CPU to perform start-up procedures when the computer is turned on. Its two major procedures are determining what peripheral devices

2.What is CMOS?

Ans A complementary metal-oxide semiconductor (CMOS) is the semiconductor technology used in most of today's integrated circuits also known as chips or microchips.

**• Assignment Level Intermediate**

* 1. What is the role of BIOS in Ios?

Ans BIOS (basic input/output system) is the program a computer's microprocessor uses to start the computer system after it is powered on. It also manages data flow between the computer's operating system (OS) and attached devices, such as the hard disk, video adapter, keyboard, mouse and printer.

* 1. What is the role of i/o in CMOS?

Ans Its role is to limit the current. The diodes are used to limit the input voltage between vdd+ Vt and vss - Vt and to protect from electro static discharge (ESD) which may be as high as 5000V.

**• Assignment Level Advance**

1. Do a practical to reset BIOS

Ans- Done

1. Do a practical to remove cmos ?

Ans- Done

Topic: Laptop & storage

**• Assignment Level Basic**

1.What is laptop?

Ans A laptop, sometimes called a notebook computer by manufacturers, is a battery- or AC-powered personal computer (PC) smaller than a briefcase. A laptop can be easily transported and used in temporary spaces such as on airplanes, in libraries, temporary offices and at meetings.

1. Why laptop is used widely now a days?

Ans Laptops have evolved into versatile, powerful devices that cater to various needs, from professional work to gaming and entertainment. Modern laptops offer improved performance, power efficiency, and portability, making them ideal for remote work and study.

**• Assignment Level Intermediate**

1 .Describe the working process of laptop?

Ans- Laptops combine all of the input and output capabilities and components of a desktop computer, including its display screen, keyboard, speakers, data storage, disc drives, and pointing devices (a touchpad or a trackpad), with a processor and operating system into a smaller device.

2.What is storage?

Ans Data storage is the collective methods and technologies that capture and retain digital information on electromagnetic, optical or silicon-based storage media. Storage is used in offices, data centers

3.List out the types of storage

Ans-

Primary Storage Devices.

Magnetic Storage Devices.

Flash memory Devices.

Optical Storage Devices.

Cloud and Virtual Storage.

**• Assignment Level Advance**

1.Do a practical to identify types of storage.

Ans- Done

2.Do a practical to disassemble and assemble the storage.

Ans- Done

3.Do a practical to install the storage devices.

Ans – Done

Topic: Printer

**• Assignment Level Basic**

1.What is printer?

Ans Printer is a device that accepts text and graphic output from a computer and transfers the information to paper, usually to standard-size, 8.5" by 11" sheets of paper

2.Why is printer needed?

Ans It's Easier to Edit and Modify Printed Documents. Regardless of what argument you put forth, it's an undeniable fact that editing and making corrections is much easier on a printed document than on a digital document

**• Assignment Level Intermediate**

1.Describe the working process of printer.

Ans- The printers laser beams your print onto a metal drum. The drum uses static electricity to attract powdered toner to the drums cylinder. The drum rolls the toner onto the paper in the form of your print. The toner is melted & pressed onto the paper by heat from a fuser as it passes through its rollers

2.What are the types of printer

Ans- Types of Printers

Laser Printers.

Solid Ink Printers.

LED Printers.

Business Inkjet Printers.

Home Inkjet Printers.

Multifunction Printers.

Dot Matrix Printers.

3D Printers.

**• Assignment Level Advance**

1.. Do a practical to install the printer

Ans- Done

2.. Do a practical to Troubleshoot the improper printing.

Ans- Done

Topic: Storage devices

**• Assignment Level Basic**

* 1. What is storage device?

Ans- Storage in computer systems. A storage device is a piece of hardware that is primarily used for storing data. Every desktop computer, laptop, tablet, and smartphone will have some kind of storage device within it. There are also standalone, external storage drives that can you can use across devices.

* 1. Why we need storage device

Ans A storage device for a computer enables its user to store and safely access the data and applications on a computer device. Knowing and learning about these computer storage devices is necessary as it works as one of the core components of the system.

**• Assignment Level Intermediate**

1. List out the types of storage devices.

Ans- Primary storage devices

RAM. RAM means random access memory which is used to access any temporary data and to get intermediate results for the usage of that information. ...

ROM. ROM means read-only memory. ...

Floppy disk. ...

Hard disk. ...

Magnetic disk. ...

Pen drive. ...

SSD. ...

Sd card

2 .Describe the working process of storage devices.

Ans Processing devices are the components responsible for the processing of information within the computer system. This includes devices such as the CPU, memory and motherboard. Storage devices are components which allow data to be stored within a computer system.

**Assignment Level Advance**

1. Do a practical to Remove storage devices and reinstall it and make a gpt disk.

Ans- Done

Topic: ATA

**Assignment Level Intermediate**

1. What is ATA?

Ans- Advanced Technology Attachment is a continuation of the IDE drive that indicates how a gadget cooperates with ATA drive. For PC Cards, any ATA obedient gadget ought to act as a standard disk

**Assignment Level intermediate:**

1.Describe working of ATA.

Ans Advanced Technology Attachment (ATA) is a standard physical interface for connecting storage devices within a computer. ATA allows hard disks and CD-ROMs to be internally connected to the motherboard and perform basic input/output functions

**Assignment level A Disadvanced:**

1**.**Do a practical to identify and install ATA cables.

Ans- Done

Topic: SATA

**Assignment Level Basic**

1.What is SATA?

Ans ATA, in full serial advanced technology attachment, also called serial ATA, an interface for transferring data between a computer's central circuit board and storage devices. SATA replaced the long-standing PATA (parallel ATA) interface. SATA

**Assignment Level dvance**

1. Describe the working of SATA.

Ans SATA transfers data one bit at a time between a drive and its host, using a seven-pin data cable and 15-pin drive power connector cable. The SATA cable results in a higher signaling rate, which corresponds to faster data throughput.

1. Do a practical to identify sata.

Ans- Done

3.Do a practical to install SATA.

Ans- Done

4.Where does SATA is used.

Ans SATA (also referred to as Serial ATA) stands for Serial Advanced Technology Attachment, an industry-standard bus interface for connecting a computer's host bus adapter to storage devices such as hard disk drives (HDD), optical drives and solid-state drives (SSD). SATA cables are typically used inside a computer's case.

Topic: SCSI

**• Assignment Basic**

1.What is SCSI?

Ans Small Computer System Interface (SCSI, SKUZ) is a set of standards for physically connecting and transferring data between computers and peripheral devices.

1. Why SCSI needed?

Ans to increase performance, deliver faster data transfer transmission and provide larger expansion for devices such as CD-ROM drives, scanners, DVD drives and CD writers.

**• Assignment level Intermediate:**

1. What is the rpm of SCSI?

Ans- Up to 10,000 rpm spindle speeds.

1. Do a Practical to install scsi.

Ans- Done

Topic: Laptop

**• Assignment Level Basic:**

1.What is laptop?

Ans  laptop, sometimes called a notebook computer by manufacturers, is a battery- or AC-powered personal computer (PC) smaller than a briefcase. A laptop can be easily transported and used in temporary spaces such as on airplanes, in libraries, temporary offices and at meetings.

2.What are the types of laptop?

Ans-

* Notebook (aka laptop
* Ultraportable.
* Ultrabook.
* Chromebook.
* MacBook.
* Convertible.
* Tablet as a laptop.
* Netbook.

3.Diffrent names of laptop.

Ans- laptop computer

* 1. laptop.
  2. microcomputer.
  3. minicomputer.
  4. notebook computer.
  5. palmtop.

**• Assignment level Intermediate**:

1. What are the parts of laptop?

Ans The parts of laptop include display screen, keyboard, base panel, top panel, Cooling Fan, RAM, hard disk, palm rest assembly, battery, hinges, speaker, optical drive, antenna etc. Introduction: As we know laptop is most common computing device used around the world due to its portable nature.

1. Do a practical of identifying parts of the laptop.

Ans- Done

* **Assignment level Advance.**

1. Do a practical to disassemble the laptop.

Ans- Done

1. Do a practical to change the RAM in the laptop.

Ans- Done

TOPIC: PRINTER

**• ASSIGNMENT LEVEL BASIC:**

* 1. WHAT IS PRINTER?

Ans A printer is a device that accepts text and graphic output from a computer and transfers the information to paper, usually to standard-size, 8.5" by 11" sheets of paper.

* 1. IS IT A INPUT DEVICE OR OUTPUT DEVICE?

Ans- Input devices are controlled by the users. Output devices are controlled by computers. Mouse, Keyboards etc., are input device examples. Monitors, Printers etc., are examples of output devices.

**• Assignment level intermediate:**

* 1. Describe the types of printer.

Ans Laser Printers.

Solid Ink Printers.

LED Printers.

Business Inkjet Printers.

Home Inkjet Printers.

Multifunction Printers.

Dot Matrix Printers.

3D Printers.

* 1. Describe inkjet printer.

Ans An inkjet printer is a computer peripheral that produces hard copies of a text document or photo by spraying droplets of ink onto paper. A typical inkjet printer can produce color printing copies with a resolution of 1200 x 1440 dpi.

**• Assignment level Advanced:**

1.Do a practical of network installation of the printer

Ans- Done

2.do a practical to troubleshoot the printer of no cartridge error

Ans- Done