

## **CO1-PROGRAM 1**

**AIM:** Introduction to Computer hardware: Physical identification of major components of a Computer system such as mother board, RAM modules, daughter cards, bus slots, SMPS, Internal storage devices, interfacing ports. Specifications of desktop and server class Computers. Installation of common operating systems for desktop and server use. (Students May be asked to formulate specification for computer to be used as Desktop, Web server)

**ANSWER:-**

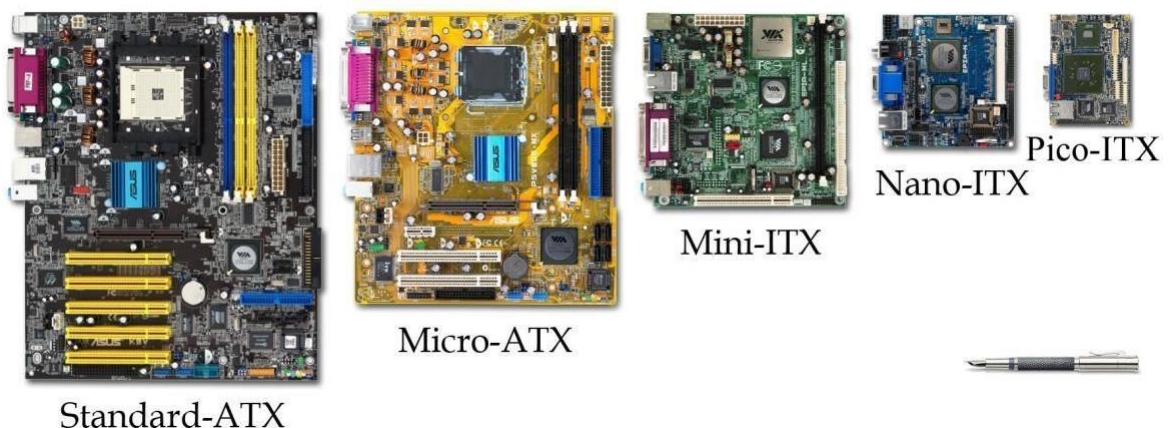
### **MOTHERBOARD:**

The motherboard serves as a single platform to connect all of the parts of a computer together. It connects the CPU, memory, hard drives, optical drives, video card, sound card, and other ports and expansion cards directly or via cables. It can be considered as the backbone of a computer.

### **Features of Motherboard**

A motherboard comes with following features –

1. Motherboard varies greatly in supporting various types of components. Motherboard supports a single type of CPU and fewtypes of memories.
2. Video cards, hard disks, sound cards have to be compatiblewith the motherboard to function properly.
3. Motherboards, cases, and power supplies must be compatible to workproperly together.



### **Standard ATX –**

This motherboard comes in 305\*244mm (length\*breadth) dimensions, these dimensions can vary with different manufacturer. This motherboard offers more expansion slots, up to four slots for RAM, Two or sometimes more than two PCIe slots for dual graphics cards and more USB and other ports for connectivity, also its size gives space in between components for airflow to keep heat in control.

**Micro ATX –**

This motherboards come in 244\*244 mm (length\*breadth) dimensions (these dimensions can vary with different manufacturer.). This Motherboard has less ports and slots as compared to Standard ATX board. This type of motherboard is more

suitable for those who don't want to much connectivity and later upgrades like adding more ram and additional GPU or Graphics card and adding PCI cards.

**eXtendend ATX –**

This motherboard is 344\*330 mm dimensions (these dimensions can vary with different manufacturer). This motherboard is designed for both dual CPU and single configuration and has up to 8 ram slots and has more PCIe and PCI slots for adding PCI cards for different purposes. It is used for workstations and servers.



**ASUS H81MCS**

**ASUS DESKTOP BOARD D945 GCPE:**

1. Model H81MCS
2. S.NO E9MOCS321582

**SMPS (Switched Mode Power Supply):**

A switched-mode power supply (SMPS) is an electronic circuit that converts power using switching devices that are turned on and off at high frequencies, and storage components such as inductors or capacitors to supply power when the switching device is in its non-conduction state.

Switching power supplies have high efficiency and are widely used in a variety of electronic equipment, including computers and other sensitive equipment requiring stable and efficient power supply.

A switched-mode power supply is also known as a switch-mode power supply or switching-mode power supply.

**SMPS:**

1. ZEBRONICS-450 W
2. ATX 12V
- 3.4 PIN CONNECTOR

**RAM (Random Access Memory)**

RAM is the internal memory of the CPU for storing data, program, and program result. It is a read/write memory which stores data until the machine is working. As soon as the machine is switched off, data is erased.

Access time in RAM is independent of the address, that is, each storage location inside the memory is as easy to reach as other locations and takes the same amount of time. Data in the RAM can be accessed randomly but it is very expensive.

**RAM Specifications (Intel)**

1. 4GB
2. DDR 3
3. 1066 MHz
4. Korean Product
5. Serial no: HYMD564M646CP6-JAA

**PROCESSOR**

Developed and manufactured by Intel, and first introduced and released in 2010, the **Core i3** is a dual-core computer processor, available for use in both desktop and laptop computers. It is one of three types of processors in the "i" series (also called the Intel Core family of processors).

The Core i3 processor is available in multiple speeds, ranging from 1.30 GHz up to 3.50 GHz, and features either 3 MB or 4 MB of cache. It utilizes either the LGA 1150 or LGA 1155 socket on a motherboard. Core i3 processors are most often found as dual-core, having two cores. However, a select few high-end Core i3 processors are quad-core, featuring four cores.

The most common type of RAM used with a Core i3 processor is DDR3 1333 or DDR3 1600.

**Power usage varies for the Core i3 processors:**

- Slower speeds (1.30 GHz to 1.80 GHz) use 11.5 W, 15 W or 25 W of power
- Medium speeds (2.00 GHz to 2.50 GHz) use 28 W, 35 W or 37 W of power
- Faster speeds (2.90 GHz to 3.50 GHz) use 35 W, 37 W or 54 W of power

Core i3 processors are often used in laptop computers, due to their lower heat generation and conservative battery usage. Some laptops can be used for up to five or six hours on a single battery charge when running a Core i3 processor.

1. Intel core i3
2. 3.40 GHz



## BATTERY

1. KTS
2. LITHIUM CELL
3. 3 VOLT

A battery that maintains the time, date, hard disk and other configuration settings in the CMOS memory. CMOS batteries are small and are attached directly to the motherboard.



## Hard disk

**Hard disk**, also called **hard disk drive** or **hard drive**, magnetic storage medium for a computer. Hard disks are flat circular plates made of aluminum or glass and coated with a magnetic material. Hard disks for personal computers can store terabytes (trillions of bytes) of information. Data are stored on their surfaces in concentric tracks. A small electromagnet, called a magnetic head, writes a binary digit (1 or 0) by magnetizing tiny spots on the spinning disk in different directions and reads digits by detecting the magnetization direction of the spots. A computer's hard drive is a device consisting of several hard disks, read/write heads, a drive motor to spin the disks, and a small amount of circuitry, all sealed in a metal case to protect the disks from dust. In addition to referring to the disks themselves, the term *hard disk* is also used to refer to the whole of a computer's internal data storage. Beginning in the early 21st century, some personal computers and laptops were produced that used solid-state drives (SSDs) that relied on flash memory chips instead of hard disks to store information.

1. **Barracuda**
2. **500GB**
3. **S/N –Z6ECP9WJ**



## Floppy Disk Drive

1. Sony
2. MODEL MPF 920
3. S.NO 21387049



A floppy disk drive (FDD), or floppy drive, is a hardware device that reads data storage information. It was invented in 1967 by a team at IBM and was one of the first types of hardware storage that could read/write a portable device. FDDs are used for reading and writing on removable floppy discs. Floppy disks are now outdated, and have been replaced by other storage devices such as USB and network file transfer.

## Interfacing Ports

1. 1 x PS/2 keyboard (purple)
2. 1 x PS/2 mouse (green)
3. 1 x D-Sub
4. 1 x LAN (RJ45) port(s)
5. 2 x USB 3.2 Gen 1 (blue)
6. 2 x USB 2.0
7. 3 x Audio jack(s)

