Long Questions

1.1 Component of computer system

Q.1 Define EDP? Also write descriptive note on hardware units.

EDP

The process of performing arithmetic and logic operations with the help of computer is known as electronic data processing (EDP).

Computer hardware

The physical parts of the computer system that you can touch and feel are known as computer hardware. In a broader sense a computer can be divided into following hardware units

Units of computer system.

A computer can be divided into following hardware units

- Input unit
- Output unit
- System unit

a Input unit.

b The devices that are used to enter data and instructions into the computer are called input devices.

Examples:

Keyboard, mouse, microphone etc.

c Output unit.

The devices that are used to receive information from the computer are called output devices.

Examples:

Monitor is used to display text and images on a screen printer is used to get output on paper, speaker is used to receive voice output etc.

d System unit.

System unit contain a number of other components which are enclosed in rectangular casing. The casing is available in two different shapes i.e. vertical shape called tower casing and horizontal shape called desktop casing. The most important component of system unit is motherboard. All other components are etched onto it. Other component of system unit are RAM, hard disk, floppy microprocessor etc.

Motherboard

Motherboard is a rigid rectangular circuit board. It is made up of silicon. An electronic pathway on the motherboard connected different components of system unit with other.

2.2 Computer software

Q.2 Define computer software? Also describe different types of software.

Ans: Computer software is a term used for organized collections of computer data and instructions. Compute program also known as computer software.

Different types of computer software.

Computer software are divided into two categories

- System software
- Application software

a System software

System software refers to the programs that are responsible for controlling and managing the actual operations of the computer hardware.

Examples:

Microsoft windows

b Application software

c Application software is used to accomplish a specific task specified by the user.

Examples:

Word processor, spreadsheet, database etc.

d Package software.

Collection of software in a single package known as package software.

Examples:

Microsoft office, etc

2.3 Organization of computer

Q.1 What is CPU? Describe briefly.

CPU

It is the main component of the computer and it is also called the processor. CPU is considered as the brain of computer. It performs all operations on data according to program's instructions. It is a small chip that is embedded on the mother board. A computer is nothing without it. It is the main component of a computer.

FUNCTIONS OF CPU

Following are the main functions of CPU

1. Accepts data or instructions from input device
2. Stores data
3. Processes data as per required by the user
4. Gives results in the form of output
5. Controls all operations inside a computer

BASIC PARTS OF CPU

There are two basic parts of CPU. These are

1. Arithmetic & Logical Unit (ALU)
2. Control Unit (CU)

Arithmetic & Logical Unit (ALU)

This unit is capable of performing arithmetic and logical operations on the data. This unit is further divided into two units

i. Arithmetic **ii.** Logical

Arithmetic unit

This unit of the CPU is capable of performing basic arithmetic operations like addition, multiplication, division and subtraction.

Logical Unit

This unit is capable of performing logical operations on the data like comparison of two numbers. Logical operations can test for three conditions

- Equal to condition

- Less than condition
- Greater than condition

EQUAL TO CONDITON

The arithmetic and logic unit compares two values to determine if they are equal. For example if the number of tickets sold equals the number of seats in the hall, then no more tickets are available.

LESS THAN CONDITON

The computer compares values to determine if one is less than another. For example if the hours a person worked this week are less than 35, then some fine is deducted from his salary.

GREATER THAN CONDITON

The computer determines if one value is greater than another. For example if the hours a person worked this week are greater than 40, then he gets bonus for working over time.

Control Unit

Control unit is an important component of CPU. It acts like a of the computer. It controls all activities of computer system. It perform the following operations.

1. It fetches instruction from main memory
2. It interprets the instructions to find what operation is to be performed
3. It controls the execution of instruction

2.4 Computer Buses (System Bus)

Q.2 What is System Bus? Explain it briefly.

SYSTEM BUS

A bus is composed of a set of communication lines or wires. It is used to move large amount of bits in the form of electrical pulses from a specified source to a specified destination. Bus is the common path which is used to send/receive data and commands from CPU to all input output devices. The capacity of a bus depends upon the number of data lines it contains. Bus with 16 lines can carry 16 bits data at a time where as bus with 32 lines can carry 32 bits data at a time.

There are three different types of computer buses

1. Data Bus
2. Address Bus
3. Control Bus

DATA BUS

The most common bus is the data bus. A data bus carries data. It is an electrical path that connects the CPU, memory, Input/Output devices and secondary storage devices. The bus contains parallel group of lines. Each line can transfer one bit of data at a time. A data bus with 8 wires can transfer 8 bits of data at a time.

ADDRESS BUS

It is similar to data bus but it is used to carry only memory addresses. It is also used to locate the memory address of the instructions to be executed next. It only connects CPU and memory. The capacity of address bus depends upon the number of its wires. If the address bus has 8 wires then CPU can address 256 bytes of memory i.e $2^8 = 256$.

CONTROL BUS

The control bus carries control information from the control unit to the other units. The control information is used for directing the activities of all units.

2.6 Ports

Q.3 Define computer ports. Also write different types of computer ports.

What is port? Explain it.

PORTS

The input, output devices are connected to the system unit through a special device called the port. It is an interface or connecting socket on the outside of system unit. On every computer a port connectors are attached to a motherboard. There are three basic types of ports.

1. Serial port
2. Parallel port
3. USB port

SERIAL PORT

A serial port provides a connection for transmitting data one bit at a time. Serial port is often referred to as communication (COM) ports. Usually these ports are on the back of system unit and are attached directly to the motherboard. The mouse, keyboard and modem are usually connected to the serial ports. Older computers use serial ports with 25 pin connectors while new computers use the serial port with 9 pin connectors.

PARALLEL PORT

A parallel port provides a connection for transmitting data 8-bits at a time. It is eight time faster than a serial port. The printer is connected to the parallel port. Most devices that send or receive large amount of data, such as printers and scanners, use parallel ports. Parallel ports are often referred to as line print (LPT) port. Usually the parallel port has 25 pin connectors that include 17 signal lines and 8 ground lines.

USB PORT

USB stands for universal serial bus. USB is a plug and play hardware interface for peripherals such as the keyboard, mouse, joystick, scanner, printer and modem. USB has a maximum bandwidth of 12 Mbits / sec and up to 127 devices can be attached. It is typically located at the back of the PC.