

Input/Output Organization :-

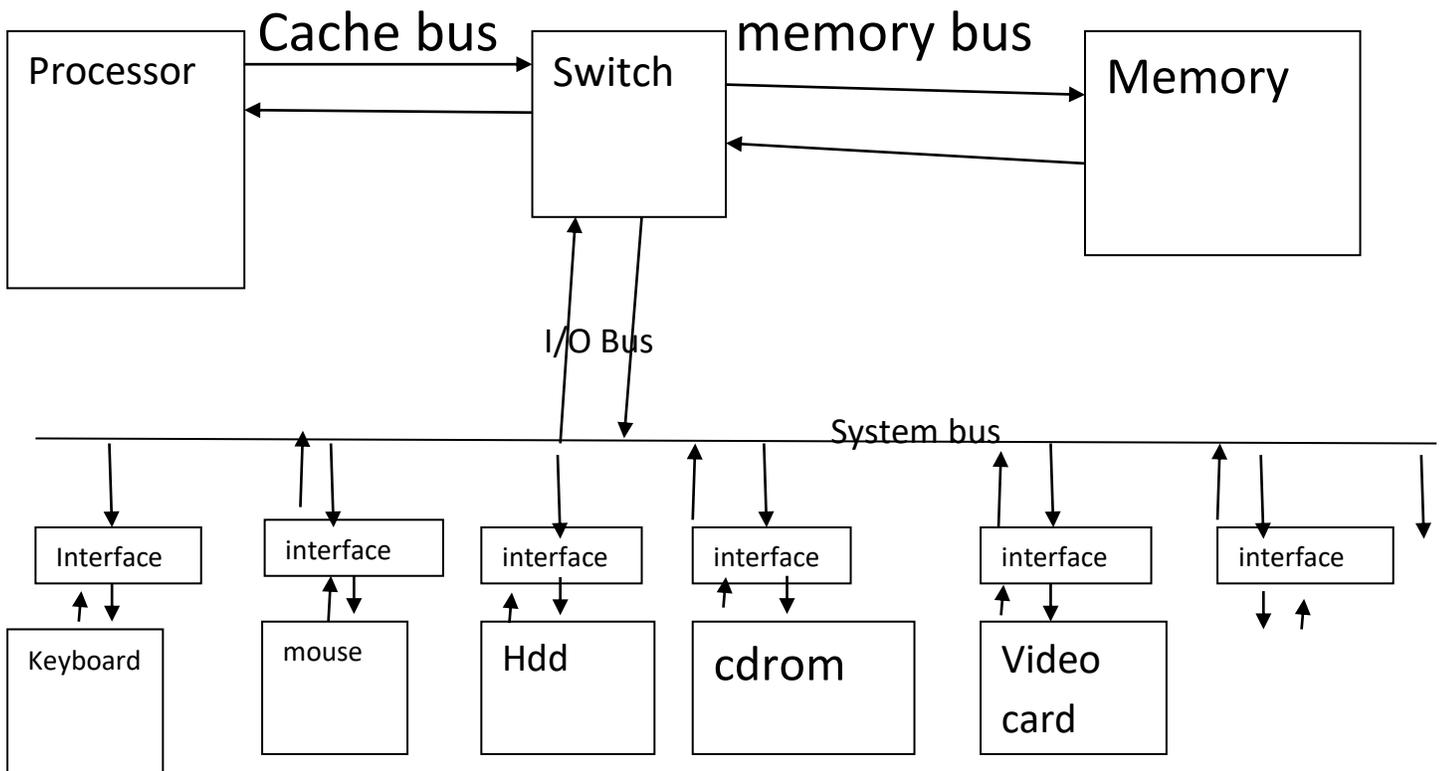
I/O Devices : Peripherals devices are keyboard, mouse, video display, flat panel unit, LCD , touch and printers. These are called I/O devices. These devices are connected into computer system by I/O buses in the computer through post. . there are some devices such as secondary memory sometimes worked as I/O devices from which data entered into computer primary memory for processing and after processing transferred into them.

I/O operations are accomplished through a wide assortment of external devices that provide means of exchanging data between external environment and the computer. The external devices attached to the computer through I/O module or interfaces . we can classified external devices into :

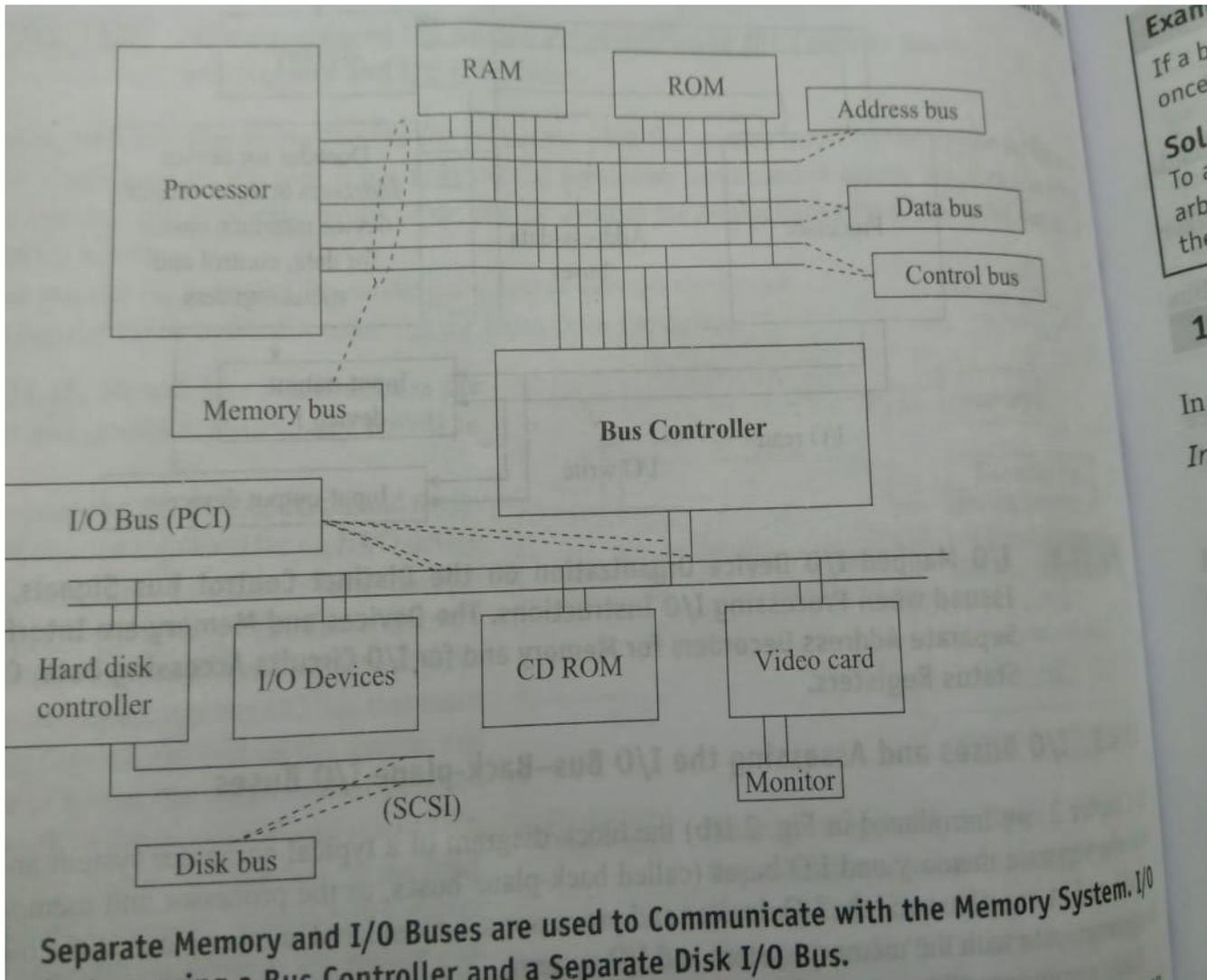
1. Human readable : suitable for communication with the computer user
2. Machine readable: suitable for communicating with equipment

3. Communications :- suitable for communicating remote devices.

Organization of I/O devices in computer system may be shown as :



It may be further shown As :-



Simple properties of I/O Devices and controller:-

1. There are wide variety of peripherals with various methods of operations . it would be impractical to incorporate the necessary logic within processor to control a range of devices
2. Data transfer rate of each devices is slower than that of the memory or processor.

3. In other , data transfer rate of some devices is faster than memory or processor.
4. Peripherals often use different formats and word lengths than the computer to which they are attached.
5. The functioning of devices and computers are different.

I/O interfaces / Modules :- I/O interface connects I/O devices to the computer system with buses. It enables communication of input from the device to computer and output from computer to the devices. Interfaces are generally make compatible to the devices to work in between them.

The functions of I/O interfaces or modules are falls into the following category:

1. Control and timing
2. Processor communication
3. Device communication
4. Data buffering
5. Error detection

The function may be stepped as :

1. The processor interrogates the I/O module to check the status of the attached device

2. The I/O module returns the device status
3. If the device is operational and ready to transmit, the processor requests the transfer of data by means of a command to the I/O module
4. The I/O module obtains a unit of data from external devices
5. The data are transferred from the I/O module to the processor

Block diagram of I/O Module:-

