



Victoria University  
of Bangladesh

## MID Term Assessment

**Md Bakhtiar Chowdhury**

**ID:** 2121210061

**Department:** CSE

**Semester:** Spring -2023

**Batch:** 21<sup>th</sup>

**Course Title: Computer Peripherals  
and Interfacing**

**Course Code: CSE 333**

**Submitted To:**

**Md. Shahin Khan**

**Lecturer, Dept. of CSE/CSIT**

Victoria University of Bangladesh

**Submission Date: 19 April, 2023**

Answer to the question NO 1(a)

Answer: -

computer peripheral: A computer peripheral is a device that is connected to a computer and expands its functionality or enhances its capabilities. peripherals can be internal and external to the computer and can be classified into input devices, output devices, and storage devices.

Three different types of peripherals

=> input

=> output

=> storage

# input:- input used to interact with, or send data to the computer (mouse, keyboards, etc)

# output:- output, which provides output to the user from the computer (monitor, printer, etc)

# storage: storage which store data processed by the computer (hard drive, flash drive, etc)

# A computer device, such as a CD-ROM drive or printer, that is not part of the essential computer. i.e. the memory and microprocessor. peripheral devices can be external such as mouse, keyboard, printer, monitor, external ZIP drive or

Answer to the question no 1(b)

1. b) Answer:-

\* An interrupt is used to cause a temporary halt in the execution of program.

\* microprocessor responds to the interrupt with an "interrupt service routine". which is a short program or subroutine that instructs the microprocessor on how to handle the interrupt.

In computing, an interrupt is a signal sent to the CPU (central processing unit) from a device or software to request its attention. interrupts are used to handle various events, such as input/output operations, timer event and hardware failures. when an interrupt occurs, the CPU suspends its current task, saves its current state and executes a specific interrupt handling routine or service routine.

Example:- Hardware interrupts- when a hardware failure occurs, such as a memory error or a power failure, the corresponding hardware device sends an interrupt signal to the CPU to request its attention. the CPU then performs a specific action such as stopping the execution of the current task or shutting down the system.

scanner, or internal, such as a CD ROM drive, CD-RW drive, or internal modem. internal peripheral devices are often referred to as integrated peripherals.

Here is some example of computer peripherals.

- \* keyboard
- \* mouse
- \* touchscreen
- \* pen tablet
- \* Joy-stick
- \* MIDI keyboard
- \* scanner
- \* digital camera
- \* video camera
- \* microphone
- \* monitor
- \* projector
- \* TV screen
- \* printer
- \* plotter
- \* speaker.

Answer to the question no 2(a)

2. a) sources of interruption.

There are 3 sources

- ① Hardware-based interrupt
- ② software-based interrupt.
- ③ Internal interrupt.

# Hardware-based interrupts:-

An external hardware applying voltage/signal to the INTR pin (interrupt pin) of the microprocessor, which indicates that the external devices, such as a printer or a keyboard, requires service

# software based interrupts:-

Execution of the interrupt instruction, INT

Example:- INT type numbers.

# Internal Interrupts:-

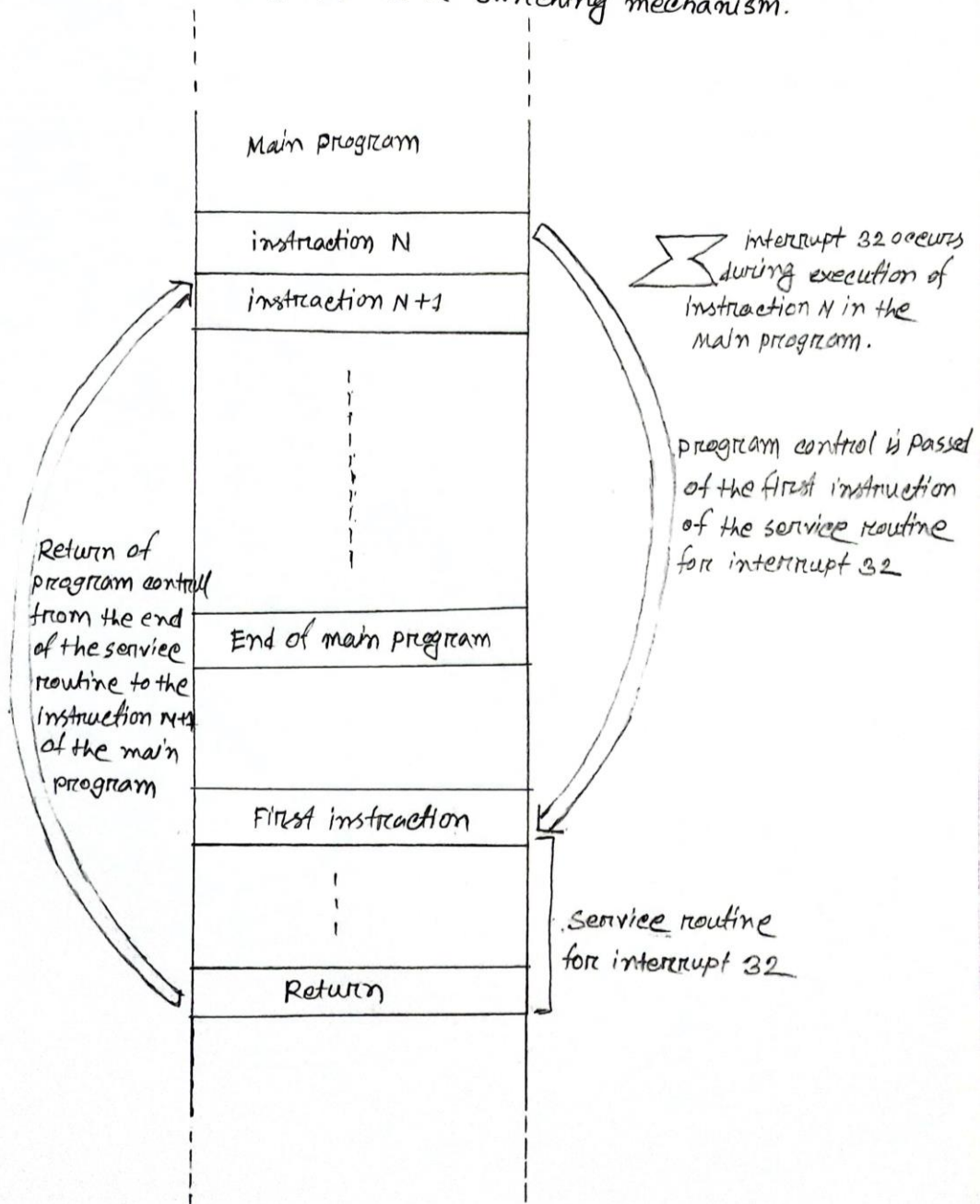
Some error condition produced by the execution of an instruction

Example:- Divide-by-zero interrupt.

Answer to the question NO 2(b)

2. b) Answer.

Interrupt program context switching mechanism.

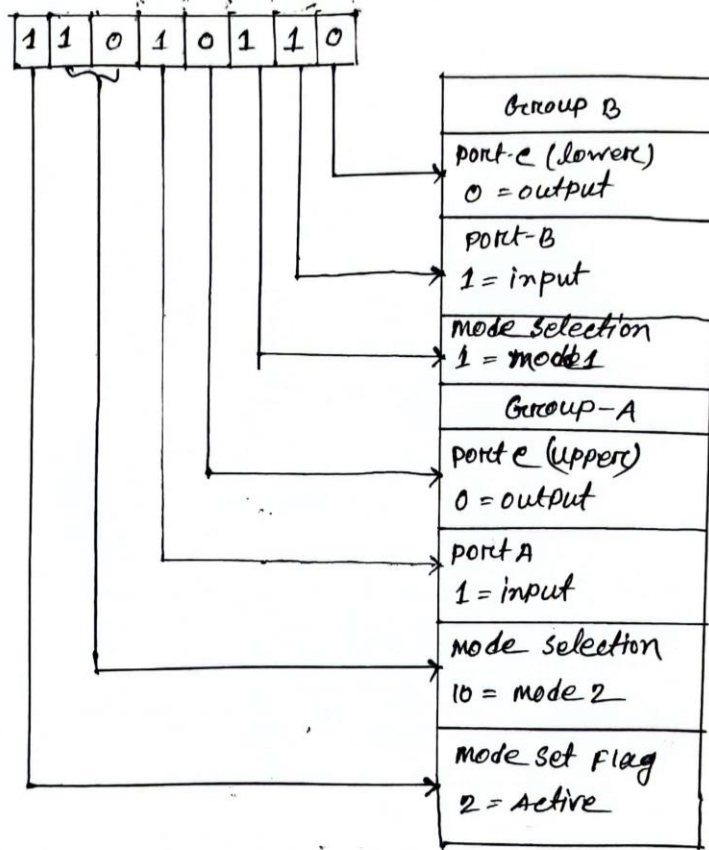


when an interrupt signal occurs, the MPU must suspend what it is doing in the main part of the program and pass control to a special routine ISR (the interrupt-service routine) that performs the function required by the external device.

Answer to the question no 2(c)

2. c) Answer:

control word of "11010110"





Answer to the question NO 3(a)

3. a) Answer:-

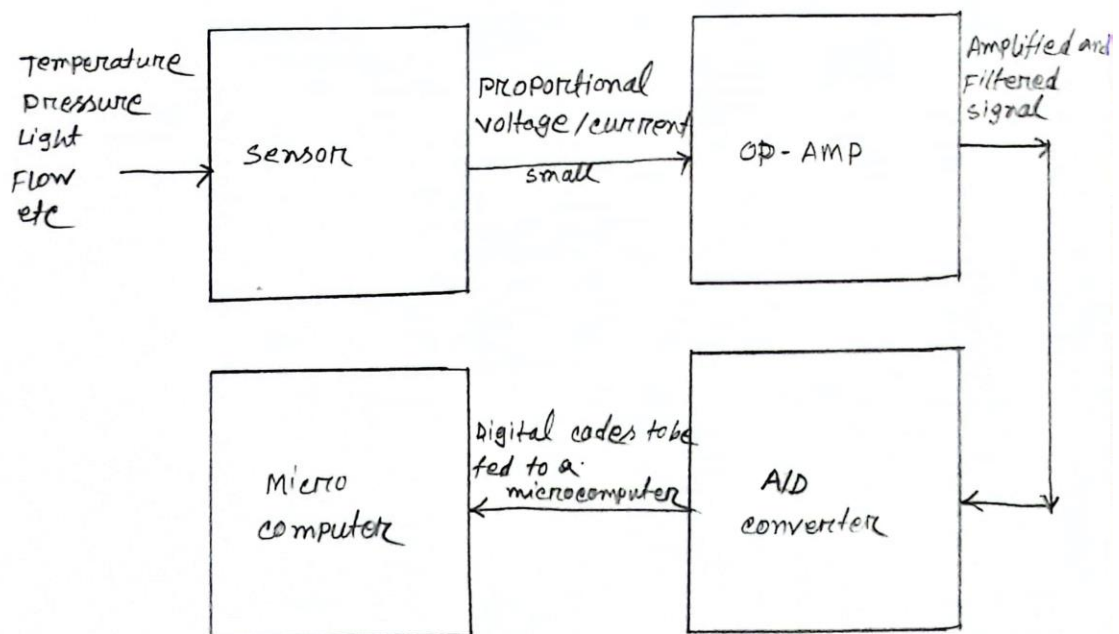
Basic concept of analog interfacing

sensors and transducers - Light, temperature, pressure, Force, Flow

D/A converter operation and specifications

A/D converter specifications, type and interfacing

microcomputer - based industrial process control system.



Answer to the question NO 3(b)

3b) Answer.

Interrupt vector table is typically stored in memory at a fixed location and contains a list of interrupt numbers and their associated interrupt handler routines. When an interrupt occurred, the CPU reads the interrupt number from the hardware device and uses it as an index into the IVT to find the address of the corresponding interrupt handler routine.

service routine :- A service routine is a software routine that is executed in response to a specific event or request in a computer system. The purpose of a service routine is to provide a particular service or functionality to the system or application.

service routine work :-

- ① interrupt service routine (ISR) - handle hardware interrupts.
- ② system call service routine - handle request from application
- ③ memory management service routine - handle request to allocate
- ④ Device driver service routine - handle request to interact with hardware devices.
- ⑤ network service routine -

Answer to the question NO 3(c)

3.c) answer:- since CS<sub>150</sub> and IP<sub>150</sub> represents the words of the type 150 interrupt pointer, we get

$$\text{Address} = 4 \times 150 = 600$$

converting to binary from gives

$$\text{Address} = 1001011000_2 = 258_{16}$$

∴ therefore

~~IP<sub>150</sub>~~

IP<sub>150</sub> is stored at 00258<sub>16</sub>

CS<sub>150</sub> is stored at 0025A<sub>16</sub>