

Name :- Abdulkarim Bin Norman Tabid

Student ID :- 2120180031

Course Title :- Computer Peripherals and Interfacing

Course Code :- CSE-333

"Mid Term"

1
Ans-to the Q-No-1(a)

Computer peripheral:- A peripheral is a device that is used to put information into or get information out of the computer.

Example: Input, Output, Storage.

Computer Interfacing:-

The process of connecting peripherals with the microprocessor for transferring instructions and results is known as interfacing.

Ans-to-the-Q-No-1(b)

Interrupt: An interrupt is used to cause a temporary halt in the execution of program.

Example: Interrupt service routine.

Ans-to-the-Q-No-2(a)

Sources of interrupts:

- ① Hardware-based interrupt.
- ② Software based interrupt.
- ③ Interrupt

Hardware based interrupts:

An external hardware applying voltage to the INTR pin to the microprocessor, which indicates that the external device

Such as a printer or a keyboard, requires service.

Software-based Interrupts:

Execution of the Interrupt instruction, INT.

Example:

INT type number.

Internal Interrupts:

Example: Div Divide by zero interrupt.

Ans-to-the-Q No-2(c)

The given word,

11010110

= ~~16~~ (06)

16

Ans.

Ans to the Q No 2(b)

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

(b) - Ans to the Q No 2(c)

011010110

(b) - Ans to the Q No 2(c)

Main program

Instruction N

Instruction N+1

End of main program

First instruction

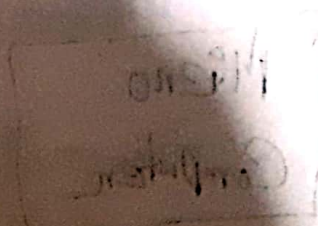
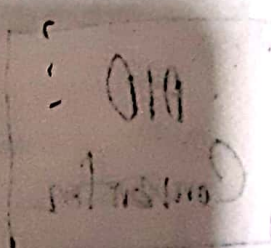
Return

Interrupt 32 occurs during execution of instruction N in the main program.

Program Control is passed to the first instruction of the service routine for interrupt 32.

Service routine for interrupt 32

Return of Program Control from the end of the service routine to the instruction N+1 of the main program

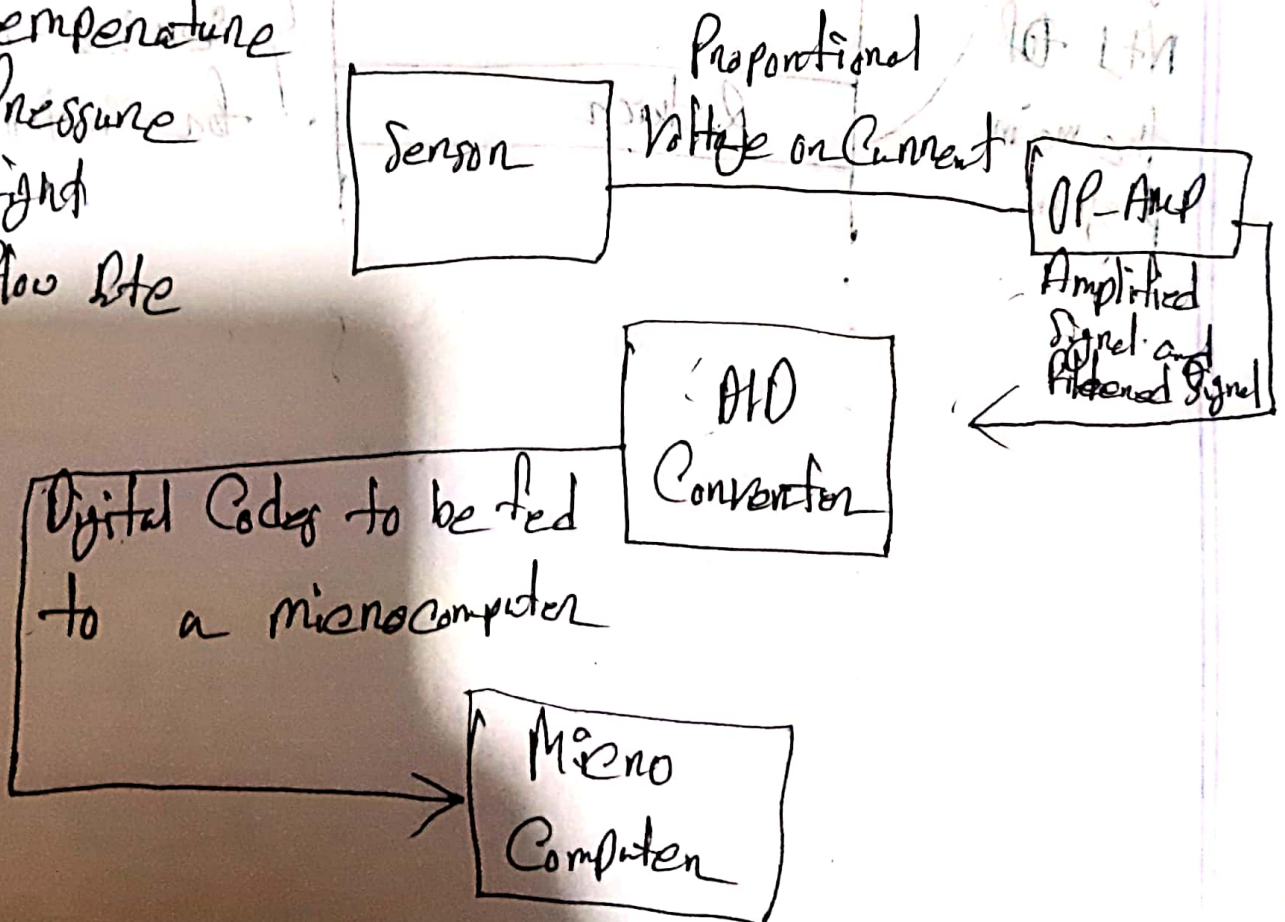


Ans-to-Que-0-No-3(a)

Basic Concepts

In order to control the machines in Electronics Factory, Medical Instruments, Automobiles etc. we need to determine the values of some variables like pressure, temperature, light, flow etc.

Temperature
Pressure
Light
Flow etc



Ans. to the Q No-3(D)

Interrupt Vector Table:-

An interrupt vector table is stored in the first 1 Kbyte of memory. This is a pointer table to indicate the location of service routines corresponding to interrupt types 0 to 255.

Works:-

- ① Each entry is 4 bytes.
- ② The CS and IP in the interrupt vector table indicate the location of the service routine for the corresponding interrupt.
- ③ The lowest five types are dedicated to specific interrupts such as the divide by zero interrupt and the non maskable

interrupt.

④ The next 27 interrupt types, from 5 to 31, are reserved by Intel for use in future microprocessors.

⑤ The upper 224 interrupt types from 32 to 255, are available to use for hardware and software interrupts.

Service Routine:

Service routine is a special block of code associated with a specific interrupt condition.

Wants:

① It works frequently.

② It is very important for

Computer.

③ It is needed in almost all

Computers.

Ans. to the Q-3 (c) is 00100

At what address are CS150 and IP150 stored in memory—

Since CS150 and IP150 represent the words of the type 150 interrupt pointer, we get

$$\text{Address} = \cancel{5 \times 150} + 600 + 5 \times 150 = 750$$

Converting to binary form gives,

$$\text{Address} = (101111110)_2$$

$$= (27E)_{16}$$

Therefore,

IP150 is stored at $(00027E)_{16}$ and

CS150 is stored at $(000180)_{16}$

Ans.