Q2 Explain interrupts of 8086 microprocessor Draw flag register of 8085 microprocessor

Sol:

Interrupts of 8086:

1. Hardware interrupt: microprocessor 8086 can get interrupt from external signal applied to non-maskable interrupt (NMI) input pin or interrupt (INTR) input pin.
2. Divide by zero Interrupt (Type 0): When the quotient from either a DIV or IDIV instruction is too large to fit in result register, 8086 will automatically execute type 0 interrupt.
3. Software interrupt:
   - The 8086 INT instruction can be used to cause the 8086 to do one of the 256 possible interrupt types.
   - The desired interrupt types are specified as a part of the instruction.
   - For example the instruction INT 32 will cause the 8086 to do a type 32 interrupt response.

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## 4. Non-Maskable Interrupt

- As the name suggest interrupt can't be disable by any software instruction.
- This interrupt is activated by low to high transition on 8086 NMI input pin.
- In response 8086 will do type 2 interrupt

## 5. Maskable Interrupt

- The 8086 INTR input can be used to interrupt a program execution.
- This interrupt can be implemented using two pins INTR & $\overline{INTA}$.

## Flag register 8085

It is 8-bit register in which five bits carry significant information in form of flag as shown in fig 2.4.1

| $D_7$ | $D_6$ | $D_5$ | $D_4$ | $D_3$ | $D_2$ | $D_1$ | $D_0$ |
|---|---|---|---|---|---|---|---|
| S | Z | x | AC | x | P | x | CY |

Fig 2.4.1