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Section : 02

CSE 341
Assignment 03

Ans: to the - Q : No - 01

Here,
8086 processor with clock frequency 8Mhz.

(a)

We know,

Time period, $T = \frac{1}{f}$

$= \frac{1}{8 \times 10^6}$ $\quad [8Mhz = 8 \times 10^6 \text{ Hz}]$

$= 125 \times 10^{-9}$

$\therefore$ Time period = 125 ns. (Ans:)

(b)

We know,

Duty cycle time $= (125 \times 33\%)$ [Here, Duty cycle = 33%]

$= 41.25$ ns

$\therefore$ Duty cycle = 41.25 ns (Ans:)

(C)

We know,

Bus cycle = (125 × 4) [Here, 1 bus cycle = 4 time period]

= 500 ns

∴ Bus cycle = 500 ns

(Ans:)

Ans: to the Q: No-02

8086 microprocessor has more than one GND pin in its layout. The reason behind this -

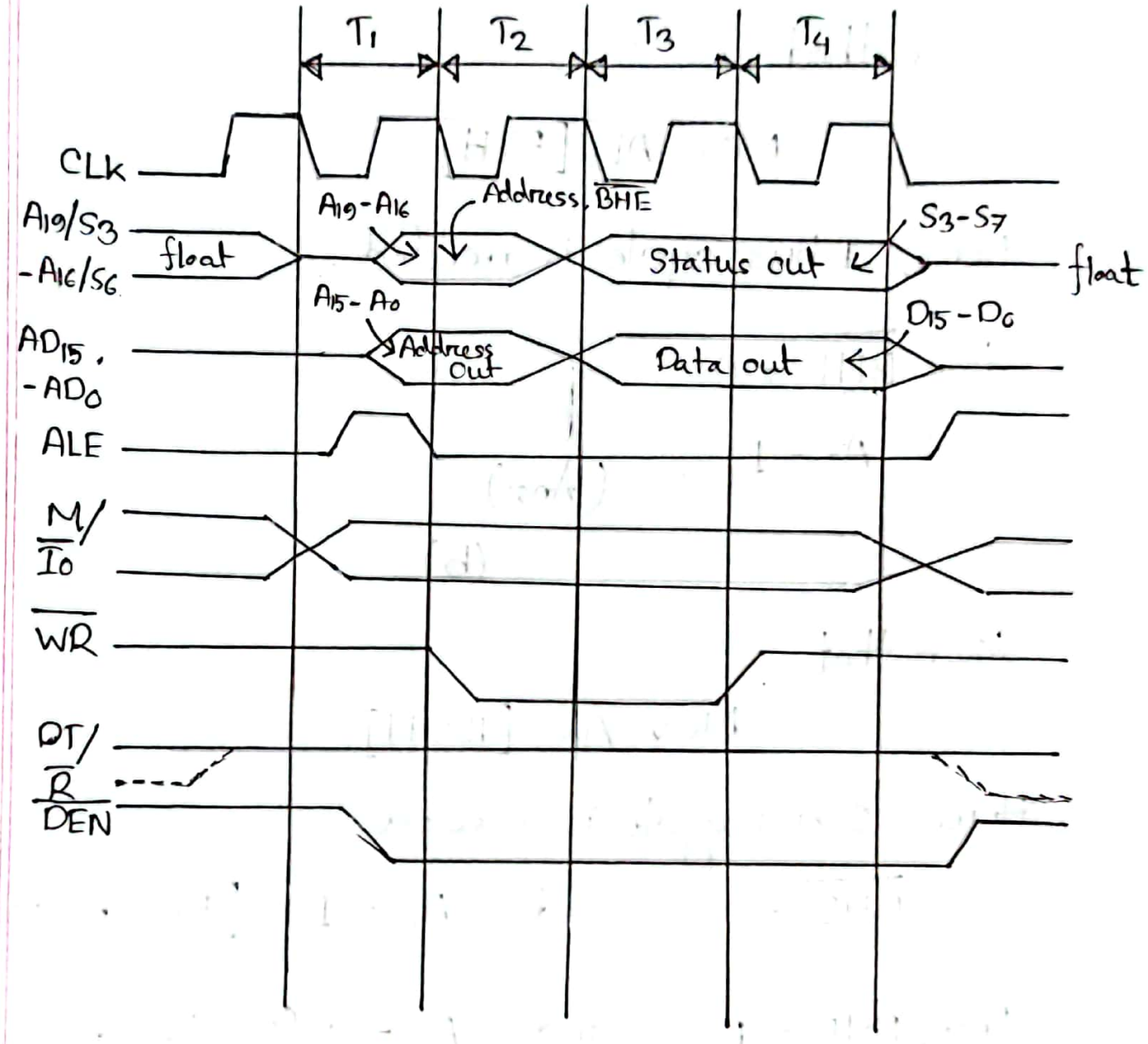
- It has more than one GND pin for the benefit of the 8086 design due to its being a complicated circuit.

- Having more GND pins makes the processor more optimized and prevents from the design complications.

- It demands a huge amount of current flow through the circuits. More than one GND pin helps to waste the aggregate heat in the circuit.

Those are the reasons thats why more than one GND pin was given in 8086 microprocessor.

Ans to the Q: No-03



Ans: to the Q: No-04

(a)

Given that,

MOV AL, [57H]

Here, 1 bus cycle is needed.

So, $\overline{BHE} = 0$

and, $A_0 = 1$ (Ans:)

(b)

Given that,

MOV Ax, [159H]

Here, 2 bus cycle is needed.

So, $\overline{BHE} = 0$ and $A_0 = 1$ [For the case of AL]

Then, $\overline{BHE} = 1$ and $A_0 = 0$ [For the case of AH]

(Ans:)

Ans: to the Q: No-05

Given that,

Interrupt type = 137

= 89H [In Hexadecimal]

Now,

$IP = (89 \times 4)H = 224H$

Then,

$CS = IP + 2$

$= (224 + 2)H = 226H$

So, IP stands for 224H and it ends in 225H. On the other hand, for CS, it stands for 226H & it ends in 227H.

(Ans:)

Ans: to the Q: No - 06

Given that,

$$CS = BBH$$

So, $IP = BBH - 2H$

$$= B9H$$

Now, if we divide IP/4 we will get the interrupt.

So, $IP_1 = B9H$

or, $IP_2 = B8H$

$\therefore$ $B8 = 184$

$\Rightarrow \frac{184}{4} = 46$.

So, the interrupt will be = 46

(Ans:)

Ans: to the Q: No- 07

Here, I need to service 36 interrupts. So, I need to 4 slave-8259 because it gives a total of (4×8) = 32 interrcupts. The master-8259 has 4 unused pins. So, if we use those with the 4 slave-8259 we will get a total of the 36 interrupts.

On the other hand, if we try to use morce than 36 interrcupt we will need another extra slave since we don't have no other free pin available. So, if we try to use morce interrupts than 36 then we will need 5 slave-8259 to be connected to a master-8259.