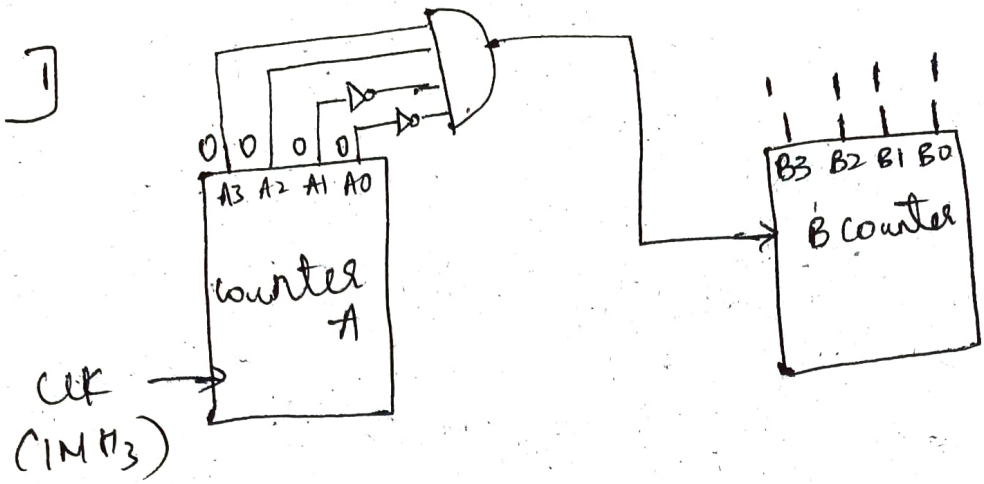
Assignment:-

1]



2] Counter A resets after every 16 pulses of clk

i.e after every $t = \frac{16}{1MHz} = 16\,\mu s$

Counter B resets after every 256 pulses of clk

i.e after every $t = 256\,\mu s$

for $T = 0.2$ millisecond.

i.e after $0.2 \times 10^{-3} \times 1 \times 10^{6} = 200$ clock pulses

Counter A :-

Since counter A resets after every 16 clock pulses,

$200 \% 16 = (8)$

hence last eight pulse are only valid.

& after eight clock pulses we get counter A as 0111 in decimal 7//

Counter B

200/16 = 12

Meaning counter B is decremented 12 times from its initial stage.

i.e 15 - 12 = 3 → 0011

i.e decimal value of counter B is 3

(3) The frequency BO is equal to (w.r.t to clk freq f = 1MHz) is

~~$BO_{freq} = \frac{f}{16 \times 16} = \frac{1}{256} = \frac{10^6}{256}$~~

~~$= 3.906\,KHz$~~

$$freq\,BO = \frac{f}{16} = \frac{10^6}{16} = 62.5\,KHz$$