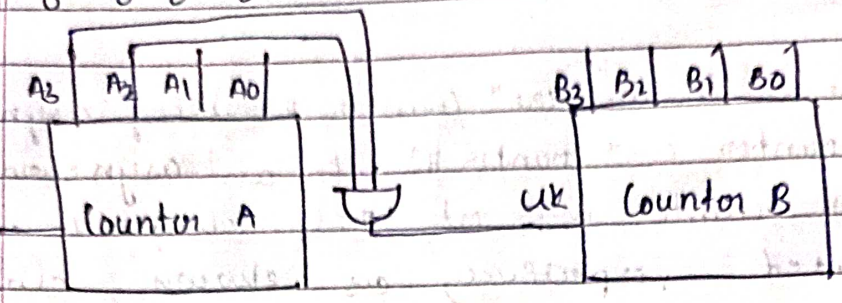
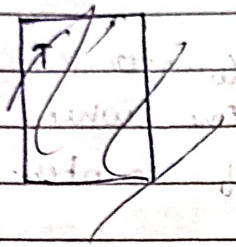
1 1 0 0 = 12

1) 0 0 0 0





Clk frequency = 1 MHz.

Time period = $\frac{1}{1\,MHz} = 1 \times 10^{-6}$ s

= 1 μs.

2) Counter A is a upcounter which counts from 0000 - 1111 which resets at 15. which requires 16 clock pulses.

At the 1100 state the clock pulse will be given to the counter B which will

which will have a time period of 16 μs and a frequency

$\frac{1}{16 \times \mu s} = 0.0625 \times 10^6$ Hz.

= 62.5 kHz.

Now 0.2 ms = ~~2000 μs~~. 0.2×10^{-3} s.

$\frac{0.2 \times 10^{-3}}{1 \times 10^{-6}} = 200.$

So at that instant of 0.2 ms

we will get 200 clock pulses.

counter A will reset at 16 clock pulses.
∴ 200 % 16 = 8 (remainder).

~~counter B will reset at~~
∴ counter A will be at 0111 state
at t = 0.2 mS.

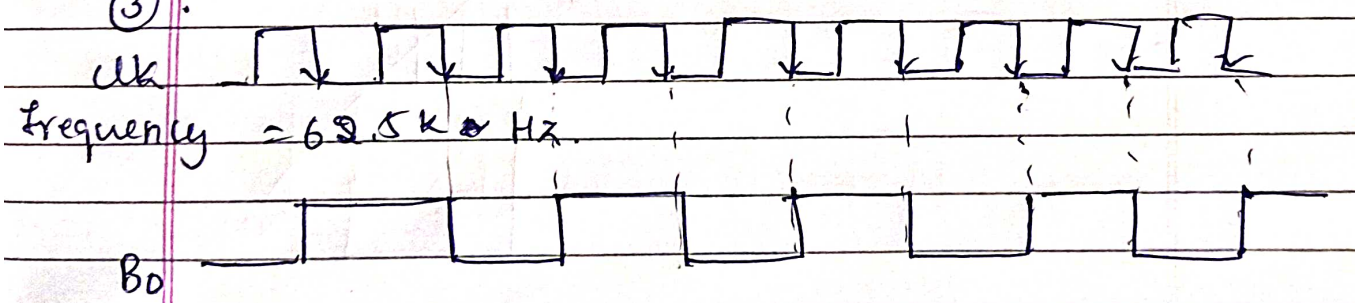
~~counter B will reset at 12 clock pulses.~~
~~200 %~~
At every 1100 state we will give
clock pulse.

200 / 16 = 12.

We will give 12 clock pulses to Counter B.
~~1111~~ ~~05~~
16 − 12 = 8p
∴ counter B will be at 0011 state at t = 0.2 mS

counter B.

③.



$\frac{62.5\,k}{2} = 31.25\,kHz$

Frequency of B_0 will be 31.25 kHz