Ans to the Q.No: 1

my ID = 193002101

$x = 1$

$y = 0$

$DC = 10\% = 0.1\%$

we know,

$$DC = \frac{R_1 + R_2}{R_1 + 2R_2} \times 100\%$$

$$\Rightarrow 0.1 = \frac{R_1 + R_2}{R_1 + 2R_2}$$

~~$\Rightarrow R_1 - 0.1R_1 = 0.$~~

$$\Rightarrow 0.1R_1 + 0.2R_2 = R_1 + R_2$$

$$\Rightarrow R_1 - 0.1R_1 = 0.2R_2 - R_2$$

$$\Rightarrow R_1(1 - 0.1) = R_2(0.2 - 1)$$

$$\Rightarrow R_1 = \frac{R_2(0.2 - 1)}{(1 - 0.1)}$$

$$\therefore R_1 = -0.88R_2$$

The condition is R_1 should be -0.8 multiple of R_2

Ans to the Q. NO: 2

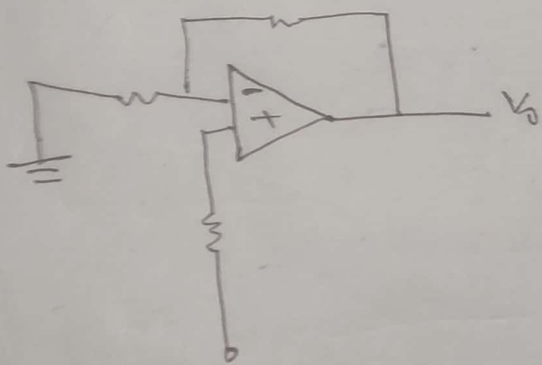
my ID: 17300 2101

$x = 1$

$y = 0$

~~$xy = 01$~~

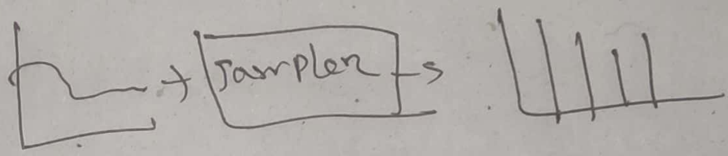
$yx = 01$ volt



Ans to the Q. No: 3

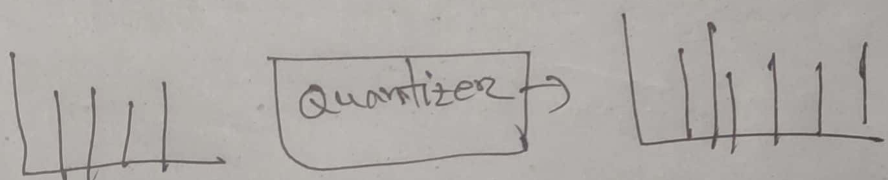
My ID = 193002101

(i) Sampling:

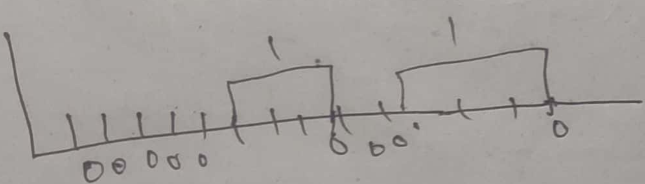


The ~~...~~ more sampling & more the nice and bit data.

(ii) Quantization:



(iii) Line conding:



Ans to the Q. No: 4

Diffenence between AOI22 and OAI31 logic circuit is as.

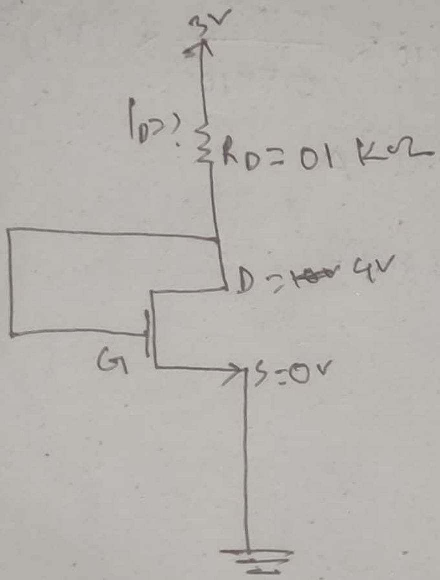
AOI 22 goes for a typical so called cmos complex gate and or inventer AOI22 onther side OAI31 circuit con get te corresponding dirrenenpte nalez atom would. require 4 for 6 nor gate and 8 trammintor even and gate 3 ton totall of 20 transformation almost By expenin and logic as slow

$$Y = \text{Not}\{(A \text{ and } B) \mid \text{cand } D\}$$

Ans to the Q.No: ~~...~~5

My ID: 12300 2101

$x = 1$
$y = 0$



Here,

$V_t = 0.6V$

$U_n = 200\mu A/V^2$

$L = 0.8\mu m$

$W = 4\mu m$

$x = 1$

$y = 0$

$I_D = ?$

Let, $D = $ ~~...~~ $4V$

Now,

V_{DS}	V_{GT}
$V_D - V_S$	$V_G - V_t$
~~4~~ $- 0$	4~~...~~ $- 0.6$
$= 4$ ~~= 40~~	$=$ ~~...~~ 3.4

$\therefore V_{DS} > V_{GT}$ so the transistor is an saturation.

we know,

$$f_d = \frac{D}{2} V^2 G T$$

$$= \frac{1}{2} \times 200 \times 10^{-6} \times \frac{4 \times 10^{-6}}{0.8 \times 10^{-6}} \times (3.4)^2$$

$$= 5.78 \times 10^{-3} A$$

$$= 5.78 \, mA$$

Ans to the Q. No: 6

Given that,

$$V_o = \frac{V_1 + V_2}{2}$$

$$= \frac{1}{2}(V_1 + V_2)$$

which might be the summing Amplifier.

So the both voltages are positive.

Here,

Let $R_f = 180k\Omega$

$$V_o = \frac{R_f}{R_i}(V_1 + V_2)$$

$$\Rightarrow \frac{R_f}{R_i} = \frac{V_o}{V_1 - (V_2)}$$

$$\Rightarrow \frac{180}{R_i} = \frac{1}{2}$$

$$\Rightarrow R_i = 90k\Omega$$