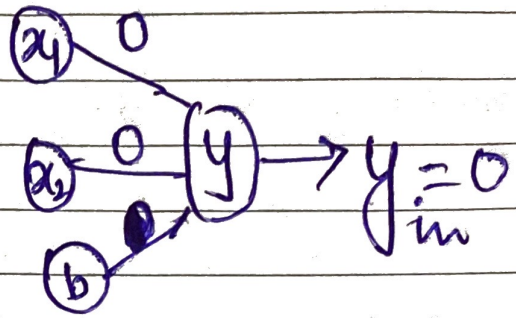
Implement binary OR gate using perceptron

x_1	x_2	t
0	0	0
0	1	1
1	0	1
1	1	1

Case 1: $x_1 = 0$ $x_2 = 0$ $t = 0$

∴ No weight updation required



Case 2: $x_1 = 0$ $x_2 = 1$ $t = 1$

$W_{(new)} = W_{old} + \alpha t x_1$

$= 0 + 0 = 0$

$W_2(new) = 0 + 1(1)(1)$

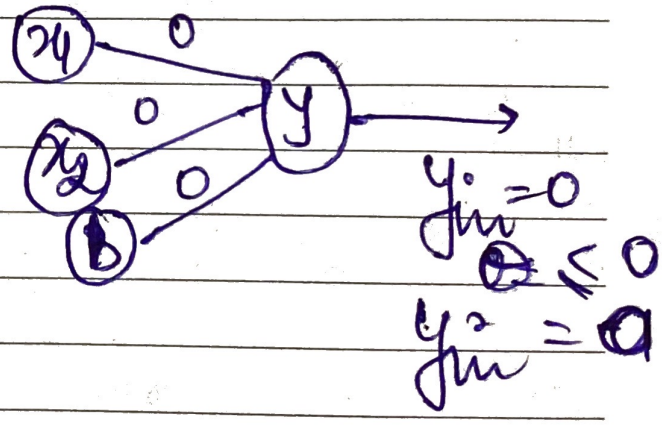
$= 1$

$b(new) = 0 + (1)(1)$

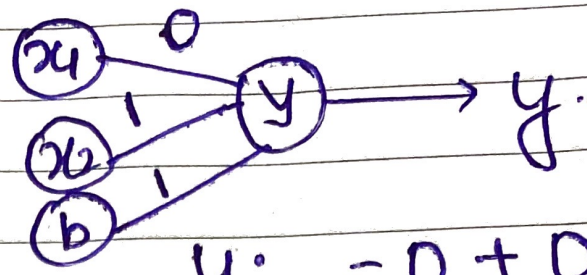
$= 1$

$y_{in}(new) = 2 > \theta$

$y_i(new) = 1$



Case 3: $x_1 = 1 \quad x_2 = 0 \quad t = 1$

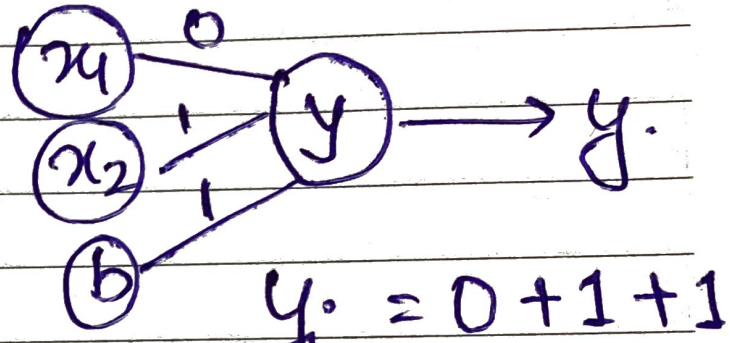


$y_{in} = 0 + 0 + 1$

$= 1$

$\therefore$ no error and no updation required

Case 4: $x_1 = 1 \quad x_2 = 1 \quad t = 1$



$y_{in} = 0 + 1 + 1$

$y_{in} = 2$

$y_{in} > 0$

$y_{in} = 1$

$\therefore$ $t = y_{in}$ (and no updation required)