20181CSE0621
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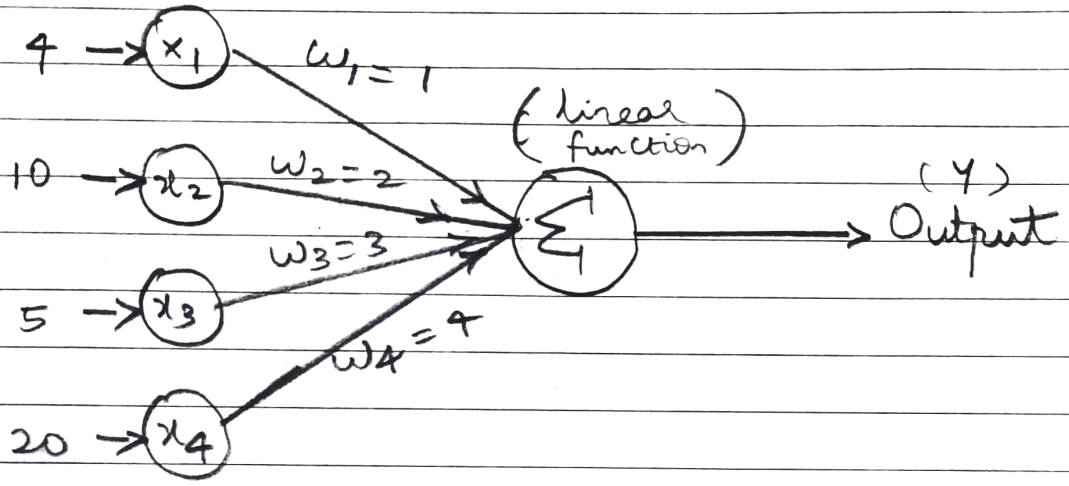
6-CSE-10.

Part-C

Q.1] Weights = 1, 2, 3, 4
Inputs = 4, 10, 5, 20.

→ Network:



- Output $y = \Sigma [2 * x_i]$ i.e. 2 x input.

Given $x = 4, 10, 5, 20$

$\therefore y = 2[(1\times4) + (2\times10) + (3\times5) + (4\times20)]$

$y = 238$

$\therefore y = 238$ is the output.

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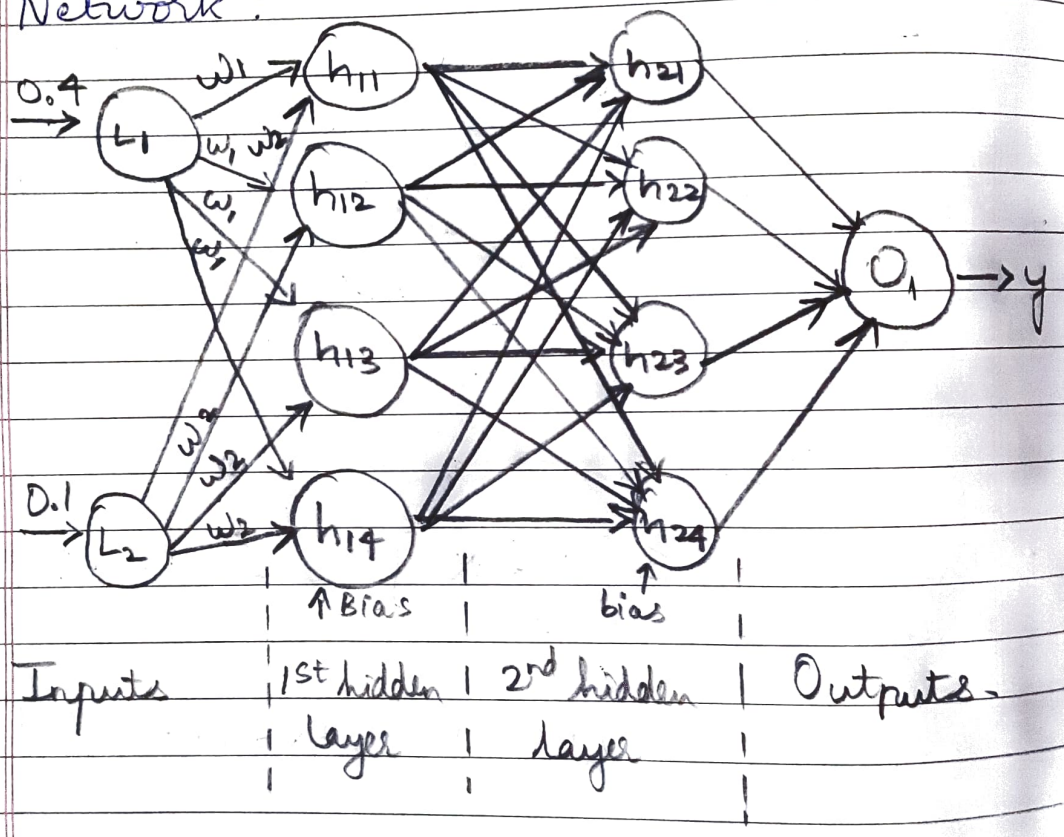
B). Input layer :- l_1, l_2
- First hidden layer :- 4 neurons $[h_{11}, h_{12}, h_{13}, h_{14}]$
- Second hidden layer :- 4 neurons $[h_{21}, h_{22}, h_{23}, h_{24}]$
- Output layer 1 → Sigmoid func^n in h_{11}

→ Given, $l_1 = 0.4$; $l_2 = 0.1$
$w_1 = 0.2$; $w_2 = 0.4$; $b = 0.10$

* Network :



* To calculate h_{11}

Inputs to h_{11} are l_1, l_2 with weights w_1, w_2.

$\therefore x(h_{11}) = l_1 w_1 + l_2 w_2 + \text{bias}$

$x = (0.4 \times 0.2) + (0.4 \times 0.1) + (0.10)$
$= 0.08 + 0.04 + 0.1$

$\boxed{x = 0.22}$

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- Activation function is sigmoid

$\Rightarrow \therefore h_{11} = \frac{1}{1+e^{-x}}$ [sigmoid func^n]

$= \frac{1}{1+e^{-0.22}}$

$$h_{11} = 0.5548$$