**AND** function implementation using **Perceptron** :-

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Inputs | Threshold | Learning Rate | Actual Output | Predicted Output | Weights  [bias,w1,w2] |
| [1,1]  [1,0]  [0,1]  [0,0] | 6 | 0.01 | 1  0  0  0 | 1  0  0  0 | [0, 0, 0]  [-0.01, 0, 0]  [-0.01, 0, 0.01]  [-0.02, 0, 0.01]  [-0.02, 0.01, 0.01 ]  [-0.02, 0.01, 0.02] |
| [1,1]  [1,0]  [0,1]  [0,0] | **5** | 0.10 | 1  0  0  0 | 1  0  0  0 | [0, 0, 0]  [-0.1, 0, 0]  [-0.1, 0, 0.1]  [-0.2, 0, 0.1]  [-0.2, 0.1, 0.1] |
| [1,1]  [1,0]  [0,1]  [0,0] | 4 | 0.50 | 1  0  0  0 | 0  0  0  0 | [0, 0, 0]  [-0.5, 0, 0]  [-0.5, 0, 0.5]  [-1, 0, 0.5] |
| [1,1]  [1,0]  [0,1]  [0,0] | **5** | 1.20 | 1  0  0  0 | 1  0  0  0 | [0, 0, 0]  [-1.2, 0, 0]  [-1.2, 0, 1.2]  [-2.4, 0, 1.2]  [-2.4, 1.2, 1.2] |

**Conclusion :-**

1. Threshold for AND function is 5.
2. Upon increasing the value of learning rate, the bias value reduces and that of weights increases.