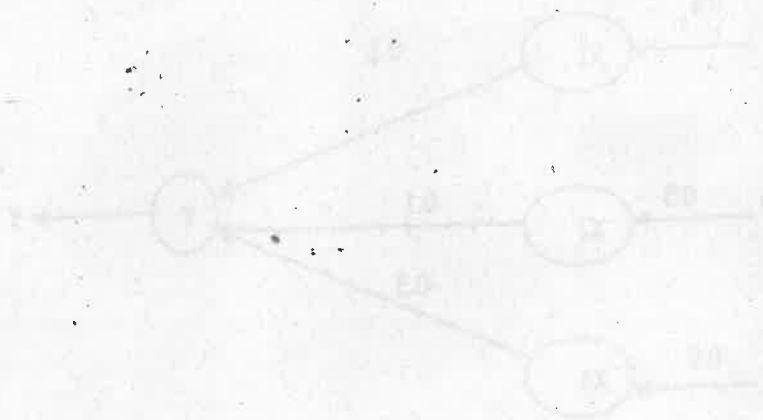

H Roll No. .....

TBC–505(3)

B. C. A. (FIFTH SEMESTER)

MID SEMESTER

EXAMINATION, Oct., 2023

SOFT COMPUTING

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing any ***one*** of the sub-questions.

(ii) Each sub-question carries 10 marks.

1. (a) What is Soft Computing ? How does it differ from Hard Computing ? Why is soft computing required ? Explain various applications of Soft Computing with examples. (CO1)

OR

(b) What is activation function. Explain the several activation functions used in ANNs. (CO2)

P. T. O.

2. (a) Discuss the main components of the biological neuron. Compare and contrast biological and artificial neural networks. (CO1)

OR

(b) Write short notes on the following : (CO2)

(i) Weights, Bias and Threshold

(ii) Advantages of ANN

3. (a) Explain Hebb learning rule for a neural network with the help of flowchart and training algorithm. (CO1)

OR

(b) Implement AND function using perception networks for bipolar inputs and targets. (CO1)

4. (a) List the stages involved in training of backpropagation network and draw the architecture of BPN. (CO1)

OR

(b) Implement ANDNOT function using McCulloch-Pitts neuron (use binary data representation). (CO2)

5. (a) Write short notes on the following : (CO2)

(i) SOM

(ii) Perception Learning Rule

OR

(b) Explain the McCulloch-Pitts neuron model. Why is the McCulloch-Pitts neuron widely used in logic functions ? For the network shown in figure calculate the net input to the output neuron. (CO2)