First Term Examination, 2019-20
Course: B.Tech. (CSE)   Year:IV   Semester:VII
Soft Computing (CSE6004)

Time: 1.5 Hrs.   Total Marks: 20

Notes:

1. All parts of a question should be answered at one place.
2. Answer should be brief and to-the-point and be supplemented with neat sketches.
3. Any missing or wrong data may be assumed suitably giving proper justification.
4. Figures on the right-hand side margin indicate full marks.

Section A

Note: Attempt All Questions   (1x5=5)

I. Discuss any four characteristics of ANN.
II. Which type of memory is used for image refinement?
III. Construct a 4-3-2 recurrent network that has feedback links from hidden layer to the input layer.
IV. Which unit of Rosenblatt's Perceptron model contains adjustable weights?
V. What is bias and threshold?

Section B

Note: Attempt any Three Questions   (2x3=6)

I. Define linear separability. Explain the training process of perceptron network.
II. Differentiate between Adaline and Madaline? Also draw architecture of Madaline.
III. What is learning? How does Supervised learning takes place?
IV. Discuss a real scenario when neural network could be a good choice for problem solving.

I. What is Backpropagation? Write all the steps used in Backpropogation Algorithm.

II. What is the necessity of activation function? Define and plot identity function, step function, binary sigmoid function, bipolar sigmoid function used in neural networks.

III. Give the output of the network in Figure below for the input $[111]^T$.
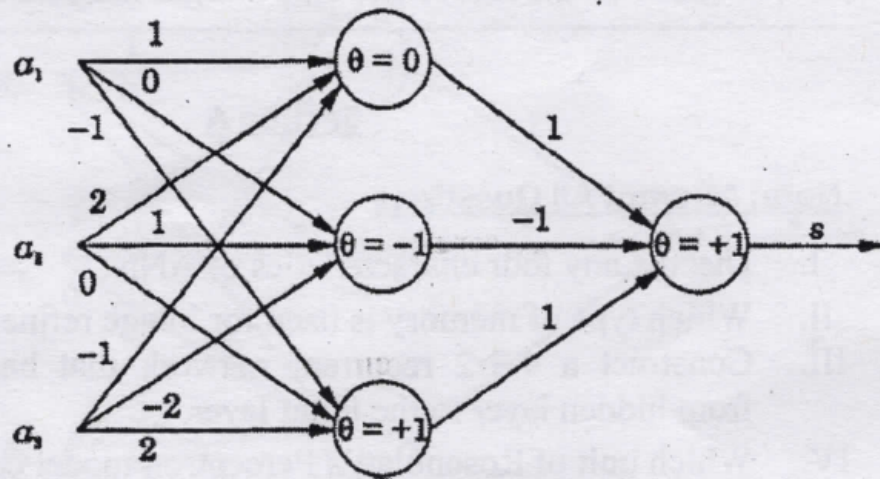
IV. Consider the simple network below:
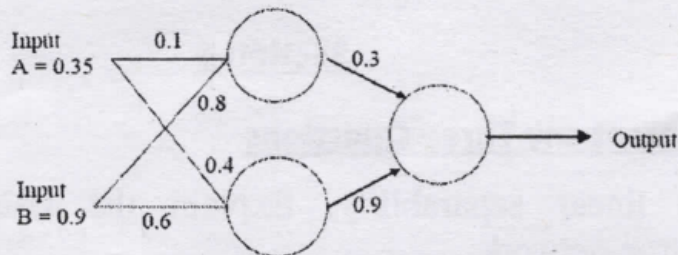
Calculate output of the given neural network. Assume that the neurons have a sigmoidal activation function and perform a forward pass on the network.