**Total No. of Questions : 4]**

**SEAT No. :** 

**PB-112**

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# T.E. (Artificial Intelligence and Data Science) (Insem.)

## ARTIFICIAL NEURAL NETWORK

## (2019 Pattern) (Semester - II) (317531)

***Time : 1 Hour]*** ***[Max. Marks : 30***

***Instructions to the candidates:***

1) ***Solve questions Q.1 or Q.2, Q.3 or Q.4.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data if necessary.***

***Q1)*** a) What is the role of activation function in neural network? Explain bipolar Sigmoid function in detail. **[5]**

b) Why is ReLU the most commonly used Activation Function? **[5]**

c) Explain architecture of Artificial Neural Network with a neat diagram. **[5]**

OR

***Q2)*** a) Draw the structure of the biological neuron and explain working of the same in brief. **[5]**

b) Write an algorithm of ADALINE and focus on its upper bound with largest Eigen Value of its correlation matrix. **[10]**

***Q3)*** a) What is Error Correction and how to minimize these errors? **[5]**

b) Explain the architecture of Multilayered neural network. **[5]**

c) Define learning and memory. Explain learning algorithms in details. **[5]**

OR

***Q4)*** a) What is the difference between Forward propagation and Backward Propagation in Neural Networks? **[5]**

b) Explain the different types of Gradient Descent in detail. **[5]**

c) Write down Perceptron Learning Algorithm for OR function along with calculation of each input vector. **[5]**