U.S.N

P.E.S. College of Engineering, Mandya - 571 401
(An Autonomous Institution affiliated to VTU, Belagavi)
Eighth Semester, B.E. - Electrical and Electronics Engineering
Semester End Examination; Aug. / Sep. - 2020
Artificial Neural Network

Time: 3 hrs   Max. Marks: 100

*Note: i) Answer **TWO** full questions, selecting **ONE** full question from **UNIT - I** and **UNIT - II**.*
*ii) Answer any **THREE** full questions, choosing from **UNIT - III, UNIT - IV** and **UNIT - V**.*

UNIT - I

1	a.	Compare and contrast biological neural network with artificial neural network.	8
	b.	What is Artificial Neural Network (ANN)? Explain the structure of Biological Neural Network (BNN) in detail.	8
	c.	Briefly explain the weight in context of ANN.	4

OR

2	a.	Explain the different architecture of ANN with relevant figures.	8
	b.	Give a comparison between supervised and unsupervised learning in detail.	6
	c.	State the Sigmoidal and Bipolar sigmoidal activation function used in multilayer network.	6

UNIT - II

3	a.	Sketch and explain the Mcculloch-Pitts neuron model.	6
	b.	What is learning in neural networks? Explain the Hebbin and perceptron learning rule.	8
	c.	Discuss competitive learning rule in detail.	6

OR

4	a.	What is the importance of Delta learning rule? "Delta learning is called as error correction rule". Justify.	10
	b.	State the training algorithm of the Hebbnet with its architecture.	10

UNIT - III

5	a.	Explain the architecture and training algorithm of the single layer perceptron network.	12
	b.	Briefly explain the multi-layer perceptron network in detail.	8
6	a.	Explain the architecture and training algorithm of the Adaline networks.	10
	b.	What is Madaline architecture? Discuss in detail the MRI algorithm used for Madaline architecture.	10

UNIT - IV

7	a.	What is the feedback network? Explain the architecture and training algorithm of discrete Hopfield net.	10
	b.	Define Bi-directional Associative Memory (BAM). Draw the architecture of a BAM network and discuss in detail.	10

8 a. What are feed forward networks? Explain the architecture of Radial Base Function Network (RBFN).   8

   b. State the application algorithm of a Back Propagation Network (BPN) and mention the application of BPN.   7

   c. Explain the merits and demerits of Back Propagation Network (BPN).   5

UNIT - V

9 a. Explain the architecture of Kohonen self-organizing feature map with relevant diagrams and its training algorithm.   12

   b. What is the Learning Vector Quantization (LVQ)? Explain LVQ in detail with its architecture.   8

10a. What is Adaptive Resonance Theory (ART) network? Explain the basic architecture and operation of ART.   10

   b. Discuss in detail the architecture and training algorithm of ART-1 net.   10

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2.9.2020

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