

**R18**

Code No: 157AN

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech IV Year I Semester Examinations, February/March - 2022**

**ARTIFICIAL NEURAL NETWORKS**

**(Electronics and Communication Engineering)**

**Time: 3 Hours**

**Max. Marks: 75**

**Answer Any Five Questions  
All Questions carry equal marks**

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- 1.a) How neural networks can be viewed as directed graphs? Discuss.
- b) Explain about Error correction and memory based learning techniques. [7+8]
- 2.a) Describe the statistical nature of the learning process.
- b) Compare and contrast different neural network architectures in brief. [7+8]
- 3.a) Explain perceptron convergence theorem with an example.
- b) Describe about learning curves and learning rate in single layer neural networks. [7+8]
- 4.a) Differentiate between single layer and multi-layer perceptrons?
- b) How Neural Networks Solve the XOR Problem with back propagation algorithm? [7+8]
- 5.a) What is Back propagation, differentiation and generalization? Explain.
- b) What is cross validation? What is the difference between cross validation and back-propagation? Explain. [8+7]
- 6.a) What are the merits and demerits of back propagation learning? Discuss.
- b) Explain how accelerated convergence is useful in back propagation. [8+7]
- 7.a) With a neat diagram, explain self organizing map and its algorithm.
- b) What are the main similarities and differences between feed-forward neural networks and self-organizing maps? [8+7]
- 8.a) Explain the general architecture of neuro dynamical models.
- b) Explain about the manipulation of attractors as a recurrent network paradigm. [7+8]

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