

Roll No.

24489

**B. Tech. 7th Semester (CSE)
Examination – May, 2019**

NEURAL NETWORKS

Paper : CSE-407-F

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions selecting *one* question from each Section and Question No. 1 is *compulsory*.

1. Describe the following :

5 × 4 = 20

- (i) Explain Widrow-Hoff learning rule.
- (ii) What is Multilayer feedforward networks ?
- (iii) What are Separability Limitations in Unsupervised Learning ?

- (iv) Differentiate between Feedforward and Feedback Networks.

SECTION – A

2. Differentiate between artificial neural networks and biological neurons in detail. Explain various applications of Neural Networks. 20
3. (a) Describe the following learning Rules : 10
- (i) Hebbian learning rule
 - (ii) Perception learning rule
- (b) What is activation function ? Explain the models of Artificial Neural Networks. 10

SECTION – B

4. What do you mean by discrete perceptron ? Explain the use of discrete perceptron in single layer perceptron model. <https://www.haryanapapers.com>
5. (a) Discuss the classification model, features & decision regions in detail. 10
- (b) Explain error back-propagation algorithm in details. 10

SECTION – C

6. Explain the various architectures of Hopfield network detail. How learning process does occur in Hopfield network ? 20
7. (a) Explain the architecture of associative memory in detail. Also discuss its retrieval algorithm. 10
- (b) Explain how encoding and decoding takes place in associative memory. 10

SECTION – D

8. Write a short note on : 20
- (a) Winner-take-all learning in unsupervised learning.
- (b) Recall Mode.
- (c) Initialization of weights.
9. What is self-organizing network ? Explain unsupervised learning of clusters in detail. 20
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