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B.Tech CSE-AI&ML 5th Semester (G-Scheme) Examination, November-2023

NEURAL NETWORKS FUNDAMENTALS

Paper–PCC-AI-301G

Time allowed : 3 hours] *[Maximum marks : 75*

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

1. (a) What is activation function? Explain. 2.5
   (b) How Hebbian learning rule works? Explain. 2.5
   (c) What do you mean by MCP model? Explain. 2.5
   (d) What is Self-Organizing Map? Explain. 2.5
   (e) How Correction learning rule works? Explain. 2.5
   (f) What is the difference between Hebb rule and Outer Product rule? 2.5

Unit-I

2. (a) What is activation function? Explain the model of Artificial Neural Networks. 10
   (b) Explain the difference between Feed forward network and Feed backward network. 05

3. Explain ANN Architecture, its various network topologies and learning strategies in detail. 15

Unit-II

4. What MCP model? Explain its architecture and solution of AND, OR function using MCP model. 15

5. (a) What do you mean by discrete perceptron? Explain the use of discrete perceptron in single layer perceptron model. 7.5

(b) Explain the linearly separable classificaition. 7.5

Unit-III

6. What is supervised and unsupervised learning? What is Adaptive Resonance Theory? What is ART Task and Structure? Explain the ART Learning Process? 15

7. Write a short note on following: 15

(a) Reinforcement learning

(b) Habbian learning

(c) Competitive learning

Unit-IV

8. Explain the following concept related to Associate Memory: 15

(a) Auto associative

(b) Hetro-associative

9. Write a short note on following: 15

(a) Storage capacity

(b) Bidirectional memory