CBCS SCHEME

15MT755

Seventh Semester B.E. Degree Examination, July/August 2021
Artificial Neural Networks

Time: 3 hrs.

Max. Marks: 80

Note: *Answer any FIVE full questions.*

1 a. List and explain types of activation functions in case of ANN.   **(08 Marks)**
   b. Explain learning algorithms in neural network.   **(08 Marks)**

2 a. State and explain, XOR is non linearly separable. Also explain the implementation of XOR function using two-layered network architecture.   **(10 Marks)**
   b. Explain the learning objectives for threshold logic neuron.   **(06 Marks)**

3 a. With example, explain the application of LMS algorithm to noise cancellation.   **(08 Marks)**
   b. Explain data pre-processing on the data prior to using it for training in ANN.   **(08 Marks)**

4 a. Explain the concepts of perceptron learning and non separable sets in case of ANN.   **(08 Marks)**
   b. Describe the generic architecture of a multilayered neural network.   **(08 Marks)**

5 a. Discuss maximum margin hyperplan concept with respect to linearly separable class problem.   **(08 Marks)**
   b. Describe how support vector machine applies to image classification problem.   **(08 Marks)**

6 a. Explain face recognition application using Radial Basis Function networks.   **(08 Marks)**
   b. Explain learning methods in RBFNS.   **(08 Marks)**

7 a. Draw the architecture of hop field auto-associative memory. Also explain electronic circuit interpretation of additive dynamic structure of Hopfield network.   **(10 Marks)**
   b. Write the difference between Boltzmann machine and Hopfield network.   **(06 Marks)**

8 a. Explain the concept of simulated annealing. Also write the basic steps used in simulated annealing method.   **(08 Marks)**
   b. Discuss how BAM is used in Hetro associative memory.   **(08 Marks)**

9 a. Explain the concept of dimensionality reduction using principal component analysis.   **(08 Marks)**
   b. Explain supervised learning task using LVQ (Learning Vector Quantization) algorithm.   **(08 Marks)**

10 a. Discuss any two application of SOM.   **(08 Marks)**
    b. Explain the concepts of Growing Neural gas algorithm.   **(08 Marks)**

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