CBCS SCHEME

USN | | | | | | | | | | |

15EC653

Sixth Semester B.E. Degree Examination, Jan./Feb. 2021
Artificial Neural Networks

Time: 3 hrs. Max. Marks: 80

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Draw the model of an Artificial Neuron model and explain each component of it. **(08 Marks)**

b. List the neuron signal functions used in ANN. **(08 Marks)**

OR

2 a. With the help of XOR problem, explain the two methods, that converts linearly non-separable problem into linearly separable. **(12 Marks)**

b. Distinguish supervised learning and unsupervised learning algorithm. **(04 Marks)**

Module-2

3 a. Discuss the weight update procedure in steepest descent search algorithm. Also write the condition for which the steepest descent algorithm is guaranteed to converge to the Wiener solution. **(08 Marks)**

b. What is back propagation algorithm? Discuss the computation of neuronal signals in back propagation algorithm. **(08 Marks)**

OR

4 a. With example explain the application of LMS algorithm to noise cancellation. **(08 Marks)**

b. What is the goal of pocket algorithm? Explain. **(08 Marks)**

Module-3

5 a. Explain learning in RBFNS. **(08 Marks)**

b. Write the Kernel function that satisfy the Mercer's condition. **(08 Marks)**

OR

6 a. Derive the expression for Empirical risk minimization principle. **(08 Marks)**

b. Explain the support vector machine design objective for linearly separable class problem. **(08 Marks)**

Module-4

7 a. Explain in detail, associative learning in neural network. **(08 Marks)**

b. Explain, associative memory model and its type with help of two layer neural network. **(08 Marks)**

OR

8 a. Discuss the basic operational steps in Boltzman machine. **(08 Marks)**

b. Explain electronic circuit interpretation of additive dynamic structure of Hopfield network. **(08 Marks)**

Module-5

9 a. Explain the operational details of (BSB) Brain State in a Box Neural Network. **(08 Marks)**

b. List the steps involved in Growing Neural Gas (GNG) algorithm. **(08 Marks)**

OR

10 a. Discuss the three basic principle of self organizing system. **(06 Marks)**

b. Discuss the generalized learning laws in Neural Network. **(06 Marks)**

c. Discuss the any one application of SOM. **(04 Marks)**

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