CBCS SCHEME

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

18EC752

Seventh Semester B.E. Degree Examination, Feb./Mar.2022
Neural Networks

Time: 3 hrs. Max. Marks: 100

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

Module-1

1 a. Define convex sets, convex hulls and linear separability with relevant diagrams. (10 Marks)
b. Explain learning algorithms in neural network. (10 Marks)

OR

2 a. State and explain the EX-OR problem and explain how to overcome it. (10 Marks)
b. Draw and explain architectural graph of multilayer perceptron with two hidden layers. (10 Marks)

Module-2

3 a. Discuss α-least mean square learning algorithm. (10 Marks)
b. Derive the expression for back propagation learning algorithm. (10 Marks)

OR

4 a. Explain how LMS is used for noise cancellation. (10 Marks)
b. Discuss μ-LMS Approximate Gradient descent. (10 Marks)

Module-3

5 a. Write a note on statistical learning algorithm. (10 Marks)
b. Illustrate how support vector machine is used for image classification. (10 Marks)

OR

6 a. Illustrate how Radial Basis function is applied for face recognition. (10 Marks)
b. Explain briefly supervised learning of centers. (10 Marks)

Module-4

7 a. Describe Associative memory model with relevant diagram. (10 Marks)
b. With a neat architectural diagram, explain the relaxation procedure in Boltzmann machine. (10 Marks)

OR

8 a. Explain Hop field auto associative memory architecture. (10 Marks)
b. Explain linear associative memory. (10 Marks)

Module-5

9 a. Explain the concept of dimensionality reduction using principal component analysis. (10 Marks)
b. Write a note on growing Neural Gas algorithm. (10 Marks)

OR

10 a. Discuss unsupervised vector quantization algorithm. (10 Marks)
b. Discuss any two applications of SOM. (10 Marks)

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