

Roll No.

Total Pages : 2

47246

BT-7/J-25

NEURAL NETWORKS AND DEEP LEARNING

Paper : PE-CS-D-411-A

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *five* questions in all, selecting at least *one* question from each unit. All questions carry equal marks.

UNIT-I

1. (a) Explain the basic concepts of neural networks and their evolution. (8)
- (b) What are the different types of neural network architectures? (7)
2. (a) Describe the learning methods used in neural networks. (8)
- (b) What are weights, bias, and threshold in neural networks? (7)

UNIT-II

3. (a) Explain the difference between supervised and unsupervised neural networks. (8)
- (b) How does the Back Propagation algorithm work in neural networks? (7)

4. (a) What is the Hopfield network, and how does it function? (8)
- (b) What is adaptive resonance theory in neural networks? (7)

UNIT-III

5. (a) Explain the architecture and working of the Kohonen Self-Organizing Feature Map. (8)
- (b) What is learning vector quantization, and how does it work? (7)
6. (a) What are Boltzmann machines, and how are they used in neural networks? (8)
- (b) Describe the characteristics of optical neural networks. (7)

UNIT-IV

7. (a) What is deep learning, and how does it differ from traditional machine learning? (8)
- (b) What is overfitting in machine learning, and how can it be prevented? (7)
8. (a) Explain convolutional neural networks and their applications. (8)
- (b) How is deep learning used in natural language processing? (7)