UG/Integrated Even Semester Examination, 2025

COMPUTER SCIENCE

(10th / 4th Semester)

Course No.: MCS-653

(Artificial Neural Network)

Full Marks: 70

Pass Marks: 28

Time: 3 hours

The figures in the right margin indicate full marks for the question.
Answer any five questions selecting one from each unit.

UNIT-I

1. (a) Discuss the model of Artificial Neuron and its working. 7

   (b) How the knowledhe is represented in ANN and what are the rules for knowledge representation. 7

2. (a) Define learning in the context of neural networks. Discuss error— correction learning. 3+5=8

   (b) Discuss competitive learning in detail. 7

UNIT-II

3. Explain adaptive filterning problem and method of steepest descent for optimization. 7+7=14

4. Describe back propagation algorithm for output node and also for hidden node. 14

UNIT-III

5. Write short notes on the following : 7x2=14

   (i) Generalization

   (ii) Cross-Validation

6. Discuss different network pruning techniques. 14

UNIT-IV

7. (a) What is winner takes all neuron? Explain. 4

   (b) Discuss the different feature mapping models. 10

8. Discuss in detail self organizing map (SOM) and process involved in the formation of SOM. 14

UNIT-V

9. Writr short notes on the following : 7x2=14

   (i) Expert system

   (ii) Pattern recognition

10. Explain in detail about different domains of application of neural network. 14

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