Roll No. ⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚   Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ECE) (2011 Batch E-III)/(ETE) (2011 Onwards E-III)   (Sem.–7,8)
NEURAL NETWORKS & FUZZY LOGIC
Subject Code : BTEC-916
Paper ID : [A3011]

Time : 3 Hrs.   Max. Marks : 60

INSTRUCTION TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.**

SECTION-A

1. **Answer briefly :**

   a) What is Short Term Memory (STM)?

   b) Explain the term feedback network.

   c) Distinguish between Learning and Learning Law.

   d) What is meant by operating range of neuron?

   e) List the various Activation functions.

   f) Write a short note on Linear associative network.

   g) List the role of hidden layers in a multilayer Feed Forward network.

   h) List some applications of ANN.

   i) Write a short note on Trapezoidal Membership function.

   j) Draw Instar (Winner-take-all) Learning law.

SECTION-B

2. Draw the architecture of multilayer feed forward network.

3. What are different ANN topologies?

4. Distinguish between Supervised and Unsupervised Learning.

5. List and explain all the basic Learning laws.

6. What is Fuzzy database? What type of information can be kept in a fuzzy database?

SECTION-C

7. The set of input training vectors are $X1 = [2\ -1\ 0\ -1]$ $X2 = [\ 0\ \ 2.5\ \ -0.5\ \ -1]$ $X3 = [-2\ \ 2\ \ 0.5\ \ -1]$ and the initial weight vector $w = [1\ \ -1\ \ 0\ \ 0.5]$ assuming $c = 0.1$. The teacher's desired response for X1, X2, X3 are $d1 = -1$, $d2 = -1$ and $d3 = 1$ respectively.

8. Differentiate clearly between PID, Fuzzy and Fuzzy Neural Control.

9. Explain Back propagation training method along with its limitations.