B.E. (Electronics & Telecommunication / Electronics & Communication Engineering) Semester Seventh (C.B.S.)

Elective - I : Fuzzy Logic and Neural Networks

P. Pages : 1

Time : Three Hours

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0832

KNT/KW/16/7455

Max. Marks : 80

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Notes :
1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Assume suitable data whenever necessary.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1. With neat sketch explain the biologic neurons and their artificial model in details. **14**

OR

2. a) Explain the working of single layer perceptron. **7**

   b) Enlist the learning rules and explain any one in details. **7**

3. a) Explain linearly non-separable pattern classification. **7**

   b) Explain the generalized delta learning rule. **6**

OR

4. a) Explain feedforward and error back propagation training. **7**

   b) State the factors which are useful for learning. **6**

5. a) Explain the gradient type Hopfield network in details. **7**

   b) How neural network is useful in control system application? **6**

OR

6. Explain in details the use of neural network for ECG signal processing application. **13**

7. a) State the difference between classical sets and fuzzy sets. **7**

   b) Explain the operations used in fuzzy logic. **6**
   i) Union   ii) Intersection   iii) Complement

OR

8. Differentiate between classical relations and fuzzy relations. **13**

9. a) Explain the importance of membership functions used in fuzzy logic. **7**

   b) Explain lambda cut with suitable example. **6**

OR

10. a) Explain the extension Principle with suitable example. **7**

    b) Enlist the different methods of Defuzzification and explain any one in details. **6**

11. Select the appropriate parameters, membership functions and rule base to design a fuzzy logic controller for Room cooler. **14**

OR

12. How fuzzy logic system is useful in image processing application? Explain with suitable example. **14**

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