AQ – 2891

Second Semester M. E. (Elect. Engg.) Examination

NEURO FUZZY CONTROL

2 EEPME 5

P. Pages : 2

Time : Three Hours] [Max. Marks : 80

Note : (1) Separate answer book must be used for each section in the subject Geology, Engineering material of civil branch and Separate answer book must be used for Section A and B in Pharmacy and Cosmetic Tech.
(2) Due credit will be given to neatness and adequate dimensions.
(3) Assume suitable data wherever necessary.
(4) Diagrams equations should be given wherever necessary.
(5) Illustrate your answer wherever necessary with the help of neat sketches.

SECTION A

1. (A) With Significance explain the use and application of fuzzy logic controller. 10

   (B) Explain Linguistic variables. 4

OR

2. (a) Explain various logical connectives with fuzzy implications. 7

   (b) What is the need of difuzzification, suggest the best defuzzification method with its significance ? 7

3. (a) What are the challenges available to design controller for inverted pendulum, and how they are addressed in fuzzy system (if so). 9

   (b) Explain in brief main approaches to fuzzy control. 4

OR

4. (a) Explain with example the importance of stability in fuzzy control systems. 9

   (b) Explain the process of fuzzy controller design by considering an example of your choice. 4

5. (a) Explain Incremental training and batch training, also give comparision of these two. 8

(b) Draw and explain perceptron architecture, with example. 5

OR

6. What is supervised and unsupervised learning ? Explain and compare, also give examples. 13

SECTION B

7. (a) What is the role of Neural control in inverse dynamics ? Explain. 6

(b) Explain, simulating PI control with a neural network. 7

OR

8. (a) What is indirect control and explain the role of neural Network in it ? 7

(b) Explain the process of linearization, with example. 6

9. What is the significance of combining Neural system with Fuzzy system, explain its need with application suitable to this, what is the difference between Neuro-fuzzy and fuzzy-Neural system. 8+5=13

OR

10. Explain ANFIS learning algorithm with its peculiar features. 13

11. As a application of Neuro fuzzy control, explain cooling scheme for laser materials and color quality processing. 7+7=14

OR

12. With the help of Neuro fuzzy control explain how to identify trash in cotton and integrated pest management system. 7+7=14