Code: 13A04607 **R13**

B.Tech III Year II Semester (R13) Regular & Supplementary Examinations May/June 2017

ARTIFICIAL NEURAL NETWORKS & FUZZY SYSTEMS

(Electronics & Communication Engineering)

Time: 3 hours Max. Marks: 70

PART - A

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

(a) List the applications of neural network.
(b) State the properties of classical set.
(c) Define fuzzy Cartesian product.
(d) Write four advantages of GA.
(e) Name the different types of defuzzification techniques.
(f) State core, support and boundary in membership function.
(g) Define membership function.
(h) What is supervised and unsupervised learning?
(i) Define Lambda – cuts for fuzzy set.
(j) Define power set.

PART - B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT - I

2 Explain the properties of commutativity, associativity, distributivity, idempotence and identity with respect to crisp sets.

OR

3 (a) Write in detail about error-detection learning.
(b) Write in detail about memory brief learning.

UNIT - II

4 What are the characteristics of feed forward neural networks? What is the significance of number of neurons in i/p & o/p layers?

OR

5 Explain the following terms: (a) Resting potential. (b) Nernst equation. (c) Action potential.

UNIT - III

6 Write short notes on: (a) Error correction learning. (b) Reinforcement learning.

OR

7 Give three sets A, B and C. Prove Demorgan's law using Venn diagrams.

UNIT - IV

8 Define recurrent network, give some examples and explain them.

OR

9 Draw the flow chart of producing solution of optimization problems using feed forward.

UNIT - V

10 Describe the design of fuzzy logic control with an air conditioner controller as an example.

OR

11 Write short notes on the following: (a) Adaptive fuzzy systems. (b) Fuzzy neural networks.

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