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Total No. of Printed Pages: 1

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B. Tech. (CSE) (Semester – 7th/8th)
NEURAL NETWORK & FUZZY LOGIC
Subject Code: BECEO1007
Paper ID: 18OE111128

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(2 marks each)

Q1. Attempt the following:

- a) What are fuzzy set operations? Illustrate with examples.
- b) What is the delta learning rule?
- c) What is a backpropagation network?
- d) What is Hopfield neural model?
- e) How Artificial Neural Network (ANN) resembles brain?
- f) What is the need of defuzzification process in fuzzy logic systems?
- g) How fuzzy sets are different from crisp sets.
- h) State Hebb's learning law.
- i) What is the role of activation function in neural behavior?
- j) What is Competitive learning in ANN?

Section – B

(5 marks each)

- Q2. Discuss the architecture and working of Radial Basis Function neural network.
- Q3. Explain the working of an FLS using block diagram representation.
- Q4. How does multi-layer perceptron better advantages than single-layer perceptron?
- Q5. What is ART? Discuss fast and slow training approaches.
- Q6. How do self-organizing maps work? Explain.

Section – C

(10 marks each)

- Q7. What are supervised, unsupervised, and reinforced learning algorithms used in artificial neural networks? Give examples.
- Q8. Illustrate mathematically the expressions of various learning laws useful in ANN.
- Q9. What is Genetic Algorithms? Discuss various steps/operations using flow chart.