R09

Code No: 58009

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, May - 2016
NEURAL NETWORKS AND FUZZY LOGIC
(Electrical and Electronics Engineering)

Time: 3 Hours **Max. Marks: 75**

Answer any Five Questions
All Questions Carry Equal Marks

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1.a) Compare biological neural networks and artificial neural networks and discuss about their performance.
b) With neat sketch explain the working of Integrate and Fire neuron model.
c) Briefly discuss about various potential applications of ANN. [5+5+5]

2.a) What is the role of activation function in ANN? Discuss in detail about various characteristics and mathematical expressions of different types of ANN activation functions.
b) Draw the following ANN architectures: (i). Single layer feed forward neural networks (ii) multi layer feed forward neural networks. [10+5]

3.a) State and prove perceptron convergence theorem.
b) Briefly discuss about various applications of perceptron model. [8+7]

4.a) What is meant by credit assignment problem? Explain.
b) Discuss in detail about various learning difficulties involved in Back propagation training algorithm. [9+6]

5. Explain the following associative memory concepts in detail:
a) Associative matrix
b) Association rules
c) Matrix memories. [5+5+5]

6.a) Discuss in detail about storage and recall algorithms of Hopfield networks.
b) Explain the concept of Hopfield stability. [8+7]

7. With simple examples discuss in detail about various properties and operations of Fuzzy sets. [15]

8. What are the basic components of Fuzzy logic system? Explain the operation of each of them in detail. [15]

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