

**R07**

Code: R7410201

B.Tech IV Year I Semester (R07) Supplementary Examinations December 2015

**NEURAL NETWORKS & FUZZY LOGIC**

(Common to EEE and E.Con.E)  
(For 2008 regular admitted batch only)

Time: 3 hours

Max. Marks: 80

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) How artificial neuron is inspired from the biological neuron? Explain.  
(b) Explain the basic architecture of McCulloch – Pitts neuron model and also realize 3-input NAND gate using McCulloch – Pitts model.
- 2 (a) What is meant by activation function? Explain in detail about various activation functions.  
(b) What is meant by unsupervised learning? Briefly discuss about various unsupervised learning strategies.
- 3 (a) State and prove perceptron convergence theorem.  
(b) What are the limitations of perceptron model? Explain.
- 4 What is back propagation? Derive its weight update algorithm with a schematic three-layer feed forward neural network.
- 5 (a) State and prove BAM stability theorem.  
(b) Discuss in detail about storage and recall algorithms of Hopfield network.
- 6 With the help of suitable examples, explain the various operations and properties of fuzzy sets.
- 7 What are the various components of fuzzy logic system? Explain each of them in detail.
- 8 What is meant by classification problem? Explain how fuzzy logic is useful to solve classification problem.

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