

Code No: RT32045D

R13

SET - 1

III B. Tech II Semester Regular/Supplementary Examinations, April - 2017

FUZZY & NEURAL NETWORKS
(Electronics and Communication Engineering)

Time: 3 hours

Maximum Marks: 70

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- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

PART -A

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|---|----|---|------|
| 1 | a) | How are learning methods classified? Give examples. | [3M] |
| | b) | Define fuzzy sets with discrete universe and continuous universe. | [4M] |
| | c) | Define core and support of a membership function. | [4M] |
| | d) | State Hebbian learning rule. | [3M] |
| | e) | Differentiate supervised and unsupervised learning. | [4M] |
| | f) | What assumptions are made in the design of fuzzy control? | [4M] |

PART -B

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|---|----|---|-------|
| 2 | a) | Explain with diagrams the different connections between neurons. | [8M] |
| | b) | Using McCulloch-Pitts rule draw the architecture for XOR function. Comment about the architecture. | [8M] |
| 3 | a) | Elaborate the statement "perceptron cannot handle tasks which are not linearly separable" with the help of suitable example. | [8M] |
| | b) | Explain linear separability in a single layer neural network. | [8M] |
| 4 | | Distinguish between the feed forward and feedback neural networks. Compare their input-output mapping. | [16M] |
| 5 | a) | Describe the pattern sequence encoding in temporal associative memory. | [8M] |
| | b) | Briefly explain about Kohonen Self organizing maps. | [8M] |
| 6 | | Discuss "Adaptive Resonance Theory" algorithm. Comment on the role of vigilance parameter in ART-1. Mention its applications. | [16M] |
| 7 | | What is classical set? Differentiate fuzzy set from classical set and name the properties of classical (crisp) sets. | [16M] |
