

Duration: 03 hrs.

[Max Marks: 80]

- N.B.:** (1) Question No 1 is Compulsory.
(2) Attempt any three questions out of the remaining five.
(3) All questions carry equal marks.
(4) Assume suitable data, if required and state it clearly.

- 1 Attempt any **FOUR** [20]
a List and explain any one defuzzification method. [05]
b Define fuzzy relation with example [05]
c Explain Lambda-cuts for fuzzy set with example. [05]
d Describe with an example supervised and unsupervised learning. [05]
e Discuss Associative Memory Networks in brief [05]
- 2 a Elaborate Radial Basis function Neural network [10]
b Discuss the training of Self-organizing kohonen feature map [10]
- 3 a Describe Fuzzy Reasoning in detail. [10]
b Write a note on Gaussian Machine [10]
- 4 a Discuss Fuzzy Inference System (FIS) and compare Mamdani and Sugeno FIS. [10]
b Describe the training algorithm for ART1. [10]
- 5 a Draw and explain ANFIS Architecture. [10]
b Discuss Training and Testing algorithm for Heteroassociative Memory Network [10]
- 6 a Explain different operations on Fuzzy relation with example. [10]
b Explain the algorithm for Mexican Hat Net [10]