

Roll No

MEIC - 201

M.E./M.Tech., II Semester

Examination, June 2016

Fuzzy Maths And Application to Controllers

Time : Three Hours

Maximum Marks : 70

- Note : i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) What do you understand by fuzzy set. Write down the properties of fuzzy sets.
b) What are linguistic variables briefly explain how the linguistic variables are defined in fuzzy logic.
2. a) Explain the formation of rule base for a fuzzy logic controller.
b) What are the methods of defuzzification. Explain center of gravity method.
3. a) Describe the structure and control strategy of non-linear fuzzy control.
b) What are the types of FKBC? Explain FKBC sliding mode control.
4. a) What are neural networks? Explain the architecture of neural networks.
b) Discuss the single layer and multiple layer neuron architectures for neural networks.

5. Explain the following terms:
 - a) Learning vector quantization
 - b) Perceptions linear network
6. a) Explain how the fuzzy set theory is more accurate than the probability theory.
b) Discuss the factors that affect the choice of membership functions for fuzzy logic controller.
7. a) What are the factors that affect the choice of fuzzification procedure for a fuzzy logic controller.
b) Explain defuzzification module for a fuzzy logic controller.
8. Define the following terms with reference to fuzzy logic controller.
 - a) Membership function
 - b) Fuzzy if then statements
 - c) Operations of fuzzy relations
