

# Paper ID [CS452]

(Please fill this Paper ID in OMR Sheet)

B.Tech. (Sem. - 7<sup>th</sup> /8<sup>th</sup>)

## FUZZY LOGICS AND SYSTEMS (CS - 452)

Time : 03 Hours

Maximum Marks : 60

### Instruction to Candidates:

- 1) Section - A is **Compulsory**.
- 2) Attempt any **Four** questions from Section - B.
- 3) Attempt any **Two** questions from Section - C.

### Section - A

(10 × 2 = 20)

Q1)

- a) Differentiate between probability and fuzzy logic?
- b) What is fuzzy expert system?
- c) What is adaptive fuzzy system?
- d) What are conditions for neural net applications?
- e) What is possibility theory?
- f) What is fuzzy modeling?
- g) What is perception?
- h) Explain properties of fuzzy sets with example.
- i) Comment on "Improving human decision making through Case-Based decision aiding".
- j) What are fuzzy set operations?

### Section - B

(4 × 5 = 20)

Q2) What is the relationship between fuzzy truth with values and probabilities?

Q3) Identify five learning tasks that apply the use of Neural Nets.

- Q4) Explain various strengths and weaknesses of neural nets and Fuzzy Logic.
- Q5) Illustrate fuzzy logic on Distributed Process Control Systems.
- Q6) Show that the inference rule  $[(A \rightarrow B) \wedge (B \rightarrow C)] \rightarrow (A \rightarrow C)$  is a quasi-tautology for fuzzy sets.

Section - C

(2 x 10 = 20)

- Q7) Explain intelligent solution for "Pattern Recognition for finger prints" using Fuzzy logic.
- Q8) Compare various defuzzification methods.
- Q9) Discuss various Neuro-fuzzy signal analyses for washing machines.