STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI-86

DEPARTMENT OF MATHEMATICS

CODE : 11MT/RO/FT 205

FUZZY SET THEORY AND APPLICATIONS

Class : M.Phil. **Max. : 100 Mks.**

Time : 3 Hrs.

Answer any FIVE questions only : (20 × 5 = 100)

1. a) Define a fuzzy set and give an example.
   b) Explain the different types of fuzzy sets. (5+15)

2. a) Explain with an example the extension principle of fuzzy sets.
   b) Discuss operations on fuzzy real line. (10+10)

3. Explain the concept of fuzzy t-norms and fuzzy t-conorms and combination of the operations with respect to fuzzy complements.

4. a) Discuss the concept of $Sup-i$ Compositions of fuzzy relations
   b) Discuss : Partitioning using Solution method. (10+10)

5. a) Explain with an instance any two types of Fuzzy propositions.
   b) Write a note on fuzzy morphisms. (10+10)

6. a) Discuss in detail: Binary relation on a single set.
   b) Explain the role of Fuzzy controllers in a Fuzzy Expert system.

7. Discuss in detail with an example any ONE of the following :
   a) Application of Fuzzy Mathematics to Pattern Recognition
   b) Application of Fuzzy Mathematics to Engineering

8. Discuss in detail with an example any ONE of the following :
   a) Application of Fuzzy Mathematics to Industry
   b) Application of Fuzzy Mathematics to Medicine

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