

OPTION (C). FUZZY SETS AND THEIR APPLICATIONS

(Questions will be set from each unit/section)

Units	Topics
I	Fuzzy sets - Basic definitions, crisp sets, properties of L-cuts, Representation of fuzzy sets, Extension principle of fuzzy Sets, Operations on fuzzy sets.
II	Fuzzy Arithmetic - Fuzzy numbers, Linguistic variables, Arithmetic operations on intervals and fuzzy numbers. Fuzzy Equation, Fuzzy Relations - crisp versus Fuzzy Relations, Binary Fuzzy Relations, Different types of Fuzzy relations, Fuzzy morphisms, Fuzzy relation equations.
III	Possibility Theory - Fuzzy measures, Evidence theory, Necessity measures, possibility measure, Possibility distribution, possibility theory and fuzzy sets. Possibility theory versus probability theory.
IV	Fuzzy Logic - An overview of classical logic, multivalued logics, fuzzy propositions, Fuzzy quantifiers, Linguistic variables and hedges, inference from conditional fuzzy propositions, the composition rule of inferences.
V	Approximate reasoning - An overview of fuzzy expert system, fuzzy implications, and their selection. Multiconditional approx. reasoning, the role of fuzzy relation equation, An introduction to fuzzy control.