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BICSE-004

B.Tech. – VIEP – COMPUTER SCIENCE AND ENGINEERING (BTCSVI)

00636

Term-End Examination
December, 2014

BICSE-004 : FUZZY SYSTEMS

Time : 3 hours *Maximum Marks : 70*

Note : *Answer any **seven** questions. All questions carry equal marks. Assume the missing data, if any.*

1. (a) What is a Fuzzy set ? What are the differences between Probability and Fuzziness ?

(b) What are the properties of Fuzzy sets ? Explain with example. *2×5=10*

2. (a) Explain t-Norms and t-Conorms for Fuzzy set.

(b) Define Linguistic variables. Explain different Arithmetic operations on Fuzzy numbers. *2×5=10*

3. Explain the following with the help of example : *2×5=10*

(i) Fuzzy Equivalence Relations

(ii) Fuzzy Compatibility Relations

4. (a) What is the relation between fuzzy truth with values and probabilities ?

   (b) What are the different forms of uncertainty in the information world ? *2×5=10*

5. (a) Compare the properties of "Crisp-sets" and "Fuzzy-sets".

   (b) Define Possibility Theory and Fuzzy Quantifiers. *2×5=10*

6. Describe a complete Fuzzy Inference system with various propositions. Take an example to show various cases. *10*

7. Discuss the role of *10*
   (i) Selection
   (ii) Cross-over
   (iii) Mutation
   in context of Genetic Algorithm.

8. Describe the multi-valued logic and compare it with Classical and Fuzzy logic. *10*

9. Give an example from daily life of each type of Fuzzy proposition and express the proposition in canonical form. *10*

10. Write short notes on any ***two*** of the following : *2×5=10*
    (a) Fuzzy Dynamic System
    (b) Fuzzy Morphisms
    (c) Fuzzy Equations
