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No. of Printed Pages : 2

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

Term-End Examination

December, 2015

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) Explain the differences between randomness and fuzziness.   *5*

   (b) Explain the need of fuzzy theory. Also discuss its advantages and disadvantages.   *5*

2. (a) Briefly discuss the group decision-making model.   *5*

   (b) Define multi-stage decision-making. Explain crisp and fuzzified automations.   *5*

3. Explain multi-valued logic and compare it with classical and fuzzy logic.   *10*

4. (a) What are the various methods of defuzzification ?   *5*

   (b) Describe in detail the vertex method of extension.   *5*

5. Explain the following terms with examples :   *10*

   (a)   Fuzzy union

   (b)   Fuzzy intersection

   (c)   Fuzzy compliment

6. (a)   Discuss Fuzzy Bayesian Decision method.   *5*

   (b)   What do you understand by a cluster ? Explain fuzzy c-means clustering.   *5*

7. Write short notes on any *two* of the following : *2×5=10*

   (a)   Membership Value Assignments

   (b)   Different structure for fuzzy if-then rule

   (c)   Fuzzy Ordering

8. (a)   Explain the concept of binary relations on a single set.   *5*

   (b)   Describe the concept of fuzzy equivalence relations.   *5*

9. (a)   What do you mean by neural networks ? List various applications of neural networks.   *5*

   (b)   Represent the finite fuzzy automation and write down the steps to create a relation.   *5*

10. (a)   Explain the concept of fuzzy databases completely.   *5*

   (b)   Define multi-criteria decision-making and explain it with suitable examples.   *5*