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**B.TECH. COMPUTER SCIENCE AND
ENGINEERING (BTCSVI)**

Term-End Examination

December, 2012

BICSE-004 : FUZZY SYSTEMS

Time : 3 hours

Maximum Marks : 70

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

1. (a) Explain the difference between randomness and fuzziness. 5
- (b) Explain the need of fuzzy theory. Also discuss its advantages and disadvantages. 5
2. (a) What are the roles of α -cuts and strong α -cuts in fuzzy set theory? What is the difference between them? 5
- (b) Explain why the standard complement is not cutworthy and strong cutworthy? 5
3. Prove that the max-min composition and min join are associative operations on binary fuzzy relations. 10

4. What is Possibility Theory and how it is related to fuzzy theory ? Explain in detail. 10
 5. Describe the multivalued logic and compare it with classical logic. Give an example to differentiate both. 10
 6. Describe a complete fuzzy inference system with various propositions. Take an example to show various cases. 10
 7. What is Hartley function and how it is related to U-uncertainty ? Give proper mathematical expressions. 10
 8. (a) Explain the role of fuzzy relation equations with the help of an example. 5
(b) Give an example of fuzzy expert system. Also give the main features of that system. 5
 9. Write the short notes on the followings : 5x2=10
(a) Fuzzy Information Retrieval
(b) Fuzzy Decision making.
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