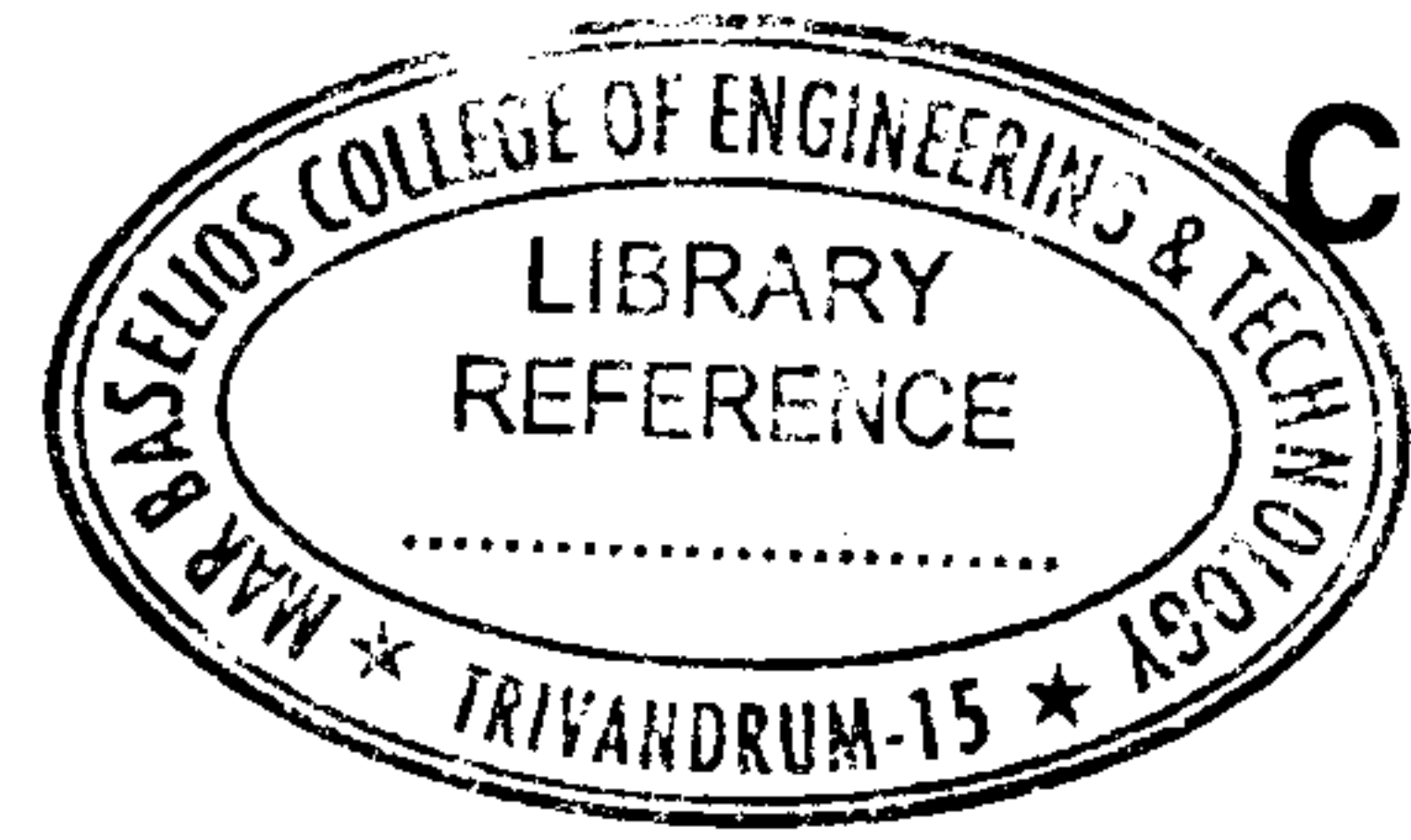




Reg. No. :

Name :

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C – 2487

**Eighth Semester B.Tech Degree Examination, May 2017
(2013 Scheme)
13.804.1 : SOFT COMPUTING (FR)**

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. What are the phases of the adaptive process of self-organizing map ?
2. Give an example for fuzzy propositions and express in canonical form.
3. Explain λ -cut of a fuzzy set.
4. Mention the role of fitness function in GA.
5. What is a hybrid intelligent control ?

(5×4=20 Marks)

PART – B

Answer **any one** question from **each** Module.

Module – I

6. Explain the learning mechanism of Hebb network and the modification to the same to avoid saturation of weights.

20

OR

7. Explain the working principle of back propagation neural network with neat architecture and flowchart.

20

P.T.O.

**Module – II**

8. With an application of your choice explain the various stages of fuzzy controller. Include the block diagram, fuzzy sets, membership functions that are being decided upon, fuzzy rule base, the type of inference that is being carried out, and the defuzzification process. 20

OR

9. Give fuzzy logic inference mechanism for the following rule under fuzzy logic. The rule : IF A THEN B ELSE C where A = very small, B = very large and C = NOT very large. Small and large are defined as under small = $1/1 + 0.8/2 + 0.4/3 + 0.2/4 + 0/5$ large = $0/1 + 0/2 + 0/4 + 0.8/4 + 1/5$ if A has size = 4, then what would be the resultant inference ? 20

Module – III

10. Describe the terms : crossover rate, mutation, reproduction, roulette wheel selection in genetic algorithm. 20

OR

11. Briefly describe :
- i) Messy genetic algorithm
 - ii) Genetic programming. 20

Module – IV

12. Write notes on the following with suitable examples.
- a) Hybrid systems and its applications. 10
 - b) Fuzzy filtered neural networks. 10

OR

13. a) How can fitness functions be found for any optimization problem ? 10
- b) Explain neuro genetic and fuzzy genetic systems. 10
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