Seat No.:	Enrolment No
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GUJARAT TECHNOLOGICAL UNIVERSITY ME - SEMESTER- III • EXAMINATION – SUMMER 2015

Subject Code: 730702 Date:02/05/2015

Subject Name: Application of artificial Intelligence to power systems

Time: 2:30 pm to 5:00 pm Total Marks: 70

Instructions:

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.

Q.1	(a) (b)	Compare and comment on various defuzzication methods. With the help of flowchart, explain the procedure of genetic algorithms.	07 07
Q.2	(a) (b)	Give detailed comparison among various fuzzy implication methods. Write a note on feed forward neural network architecture.	07 07
	(b)	OR What is Artificial Intelligence? Discuss properties and benefits of AI.	07
Q.3	(a) (b)	Discuss role of intelligent systems in electrical load forecasting. Explain use of ANN to ascertain voltage stability. OR	07 07
Q.3	(a)	Explain following terms related with GA: (1) Fitness function (2) Selection (3) Reproduction	07
	(b)	What are the major drawbacks of traditional security assessment tools based on numerical algorithms? Explain AI technique for power system state security assessment.	07
Q.4	(a)	Explain difference between genetic algorithm and other optimization techniques as well as search procedures.	07
	(b)	Discuss the factors affecting the training time in the supervised learning of the ANN.	07
		OR	
Q.4	(a)	Write a note on various structures of ANN.	07
	(b)	Write a note on Elman back propagation neural network.	07
Q.5	(a)	Discuss application of GA for maintenance schedule of electrical power transmission network.	07
	(b)	What do you mean by membership function? Discuss different types of membership functions in brief.	07
		OR	
Q.5	(a)	Explain weight calculations for output layer and hidden layer neurons.	07
	(b)	Write a note on ANFIS.	07
