

Registration No. :

--	--	--	--	--	--	--	--	--	--

Total number of printed pages – 2

B. Tech  
PCIT 4401

Seventh Semester Back Examination – 2014

PRINCIPLES OF SOFT COMPUTING

BRANCH : IT

QUESTION CODE : L 149

Full Marks – 70

Time : 3 Hours

Answer Question No. 1 which is compulsory and any **five** from the rest.

The figures in the right-hand margin indicate marks.



1. Answer the following questions : 2×10
  - (a) How does soft computing differ from hard computing ?
  - (b) List different selection mechanisms in GA.
  - (c) What is the main difference between probability and fuzzy logic ?
  - (d) Write down the energy function of a discrete Hopfield net.
  - (e) State different de-fuzzification techniques.
  - (f) Name the different crossover operators used in GA.
  - (g) Distinguish between sequential and batch mode of back propagation learning.
  - (h) List the various activation functions used in ANN.
  - (i) What is an activation function ?
  - (j) What is an auto associative network ?
2. (a) What are the objectives of soft computing ? Briefly mention the application area of soft computing. 4  
(b) List the types of hybrid system and its application domain where hybrid system are used. 6
3. Explain genetic operators and fitness function in respect of evolutionary computing. 10

P.T.O.

4. (a) Differentiate between fuzzy sets and crisp sets. 4  
(b) How genetic algorithms perform better result as compared to traditional approaches ? 6
5. (a) How can neuro-fuzzy modeling approach be applied to any optimization problem ? 5  
(b) Draw the architecture of fuzzy back Propagation network for neural network. 5
6. (a) Distinguish between a feed forward network and a recurrent network. 5  
(b) Is it possible to solve Travelling Sales Man Problem using Genetic Algorithm ? How ? Write the steps in brief. 5
7. (a) Explain the principle of Back Propagation. Derive the equation for weight updation. 5  
(b) What are the different methods used to assign membership function to fuzzy variables ? Explain two of them. 5
8. Derive the Back propagation through time (B P T T) algorithm used to train the recurrent neural network. 10

