[Total No. of Questions - 9] [Total No. of Printed Pages - 2]
(2125)

15335

B. Tech 7th Semester Examination

Soft Computing (NS)

CS-415/IT-411(c)

Time : 3 Hours **Max. Marks : 100**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Candidates are required to attempt five questions in all selecting one question from each of the sections A, B, C & D, and all the subparts of the questions in Section E.

SECTION - A

1. What are some Neural Network Paradigms, explain them? (20)

2. Explain the meaning of the following concepts:

   (i) Deviation scaling parameter in RBF networks.

   (ii) Hebbian learning law, in case of unsupervised learning. (20)

SECTION - B

3. Draw the block diagram of a ART network. Give details of each block. (20)

4. (a) What is the difference between ART and BAM networks?

   (b) Give an example of bidirectional pattern association with a possible use of BAM. (20)

[P.T.O.]

SECTION - C

5. Write a note on fuzzy relations. (20)

6. (a) Convert the following sentences to predicate logic–

   (i) Marcus was a man

   (ii) All man are mortal

   (iii) No mortal lives longer than 120 years.

   (b) What is meant by tautologies? Give any two examples. (20)

SECTION - D

7. Describe tournament selection strategy. (20)

8. Explain the working principle of Genetic Algorithms. (20)

SECTION - E

9. (a) What is meant by Mc Culloch and Pitt's model? (3)

   (b) Explain the meaning of winner-takes-all rule. (3)

   (c) Give one application of Heterocorrelators. (2)

   (d) What is the difference between ART1 and ART2? (2)

   (e) Define cutworthy property of fuzzy sets. (2)

   (f) Give any one inference rules. (2)

   (g) Which are the commonly used aggregation operations? (2)

   (h) What is meant by encoding in genetic algorithms? (2)

   (i) What is the main difference between crossover and mutation? (2)