

**M.C.A. SEM - V (CHOICE BASED CREDIT SYSTEM 2011 & 2012
COURSE) : SUMMER - 2018
SUBJECT : SOFT COMPUTING**

Day : **Tuesday**
Date : **24/04/2018**

S-2018-1800

Time : **02.00 PM TO 5.00 PM**
Max. Marks : 100

N.B.

- 1) Attempt any **FOUR** questions out of **SIX** in Section – I and any **TWO** questions out of **THREE** in Section – II .
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.

SECTION – I

- Q.1** Explain the following with suitable diagram: (15)
i) Auto-Associative Memory
ii) Hetero – Associative Memory
- Q.2** What is activation function? Explain its application and Artificial Neural Network. (15)
- Q.3** What are the factors affecting backpropagation training, justify with suitable case? (15)
- Q.4** Differentiate between fuzzyfication and defuzzyfication with detailed description of each step involved. (15)
- Q.5** Define and give example for: (15)
i) Indiscernibility matrix
ii) Discernibility Matrix
- Q.6** Draw the flow chart of Genetic Algorithm and explain each step involved, also throw some light on generation cycle. (15)

SECTION – II

- Q.7** A student passes if his marks >35 and he gets 2nd class if marks are >50 he gets 1st class if mark are >60. Represent this as perceptron model using 3 perceptrons. (Neat Diagram with proper labels should be drawn). (20)
- Q.8** Describe an instance of real life application of Rough sets. (20)
- Q.9** Given following fuzzy set definitions. Compute Union, Intersection, Compliments (20)
 $X = \{a, b, c, d, e\}$
Memberships for Set A : $\mu_A(a) = 0.3, \mu_A(b) = 0.4, \mu_A(c) = 0.5, \mu_A(d) = 0.55, \mu_A(e) = 0.85$
Membership for Set B : $\mu_B(a) = 0.6, \mu_B(b) = 0.65, \mu_B(c) = 0.70, \mu_B(d) = 0.75, \mu_B(e) = 0.65$
Membership for Sect C : $\mu_C(a) = \mu_C(b) = \mu_C(c) = 0.0 \mu_C(d) = \mu_C(e) = 1.00$
Find Memberships for $A \cup B, A \cap C, C^c, A \cup B \cup C, A \cap B \cap C$.

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