No. of Printed Pages : 03 Roll No. .....

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M.C.A EXAMINATION, 2026

(From 2021-22 Onwards)

(Fourth Semester)

(Re-appear Only)

SOFT COMPUTING

Time : 2 Hours] [*Maximum Marks : 32*

Before answering the question-paper, candidates must ensure that they have been supplied with correct and complete question-paper. No complaint, in this regard will be entertained after the examination.

Note : Attempt *Five* questions in all. Q. No. **1** is compulsory. Attempt *four* more questions selecting *one* question from each Unit.

(Compulsory Question)

1. (a) Differentiate between soft computing and hard computing.

(b) What do you mean by learning rules ?

(c) Write the advantages of fuzzy logic based systems.

(d) What do you mean by fitness function ? **8**

Unit I

2. Write the features of type of problems in which hard computing gives better results than soft computing and why ? **6**

3. Draw and explain the architecture of ANN. **6**

Unit II

4. What do you mean by perception model how it differ from Hopfield network ? **6**

5. Write the importance of training rules. Write the set of rules for number of vehicle based Al traffic light system. Write the hypothesis for your proposed design. **6**

Unit III

6. Write a set of member functions, method of value assignment for a Fuzzy based light house. **6**

7. What is the importance of Defuzzification ? Write steps for its implementation. Explain Defuzzification is a compulsory step or not. **6**

Unit IV

8. Discuss the various encoding methods for genetic algorithms. **6**

9. Write short notes on the following : **6**

(a) Reproduction

(b) Mutation.

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