PAPER ID-311110

Subject Code: KCS056

Roll No: | | | | | | | | | | | | | |

BTECH
(SEM V) THEORY EXAMINATION 2023-24
APPLICATION OF SOFT COMPUTING

TIME: 3 HRS **M.MARKS: 100**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt *all* questions in brief. **2 x 10 = 20**

Q no.	Question	Marks	CO
a.	Explain neuron with its structure.	2	1
b.	Define an artificial neural network.	2	1
c.	Draw diagram for multilayer perceptron model.	2	2
d.	Discuss the different features of single layer perceptron.	2	2
e.	Explain roles of crisp sets.	2	3
f.	Write a difference between crisp and fuzzy set.	2	3
g.	List basic fuzzy set operations.	2	4
h.	Explain fuzzy relations.	2	4
i.	Define genetic algorithm.	2	5
j.	List different types of encoding in genetic algorithm.	2	5

SECTION B

2. Attempt any *three* of the following: **10 x 3 = 30**

a.	Explain about activation function with its use in neuron model.	10	1
b.	Explain how linear separable task is defined for two dimensional spaces? Discuss XOR problem.	10	2
c.	Explain all fuzzy set properties.	10	3
d.	Verify De morgan's Law using truth table for three states.	10	4
e.	Explain different methods of selection in genetic algorithm in order to select a population for next generation.	10	5

SECTION C

3. Attempt any *one* part of the following: **10x1=10**

a.	Draw a single layer feed forward network and explain its working function.	10	1
b.	Explain working of recurrent network and compare with multilayer neural network.	10	1

4. Attempt any *one* part of the following: **10x1=10**

a.	Explain McCulloch -Pitts model and write disadvantage of it.	10	2
b.	Draw a network for solving exclusive OR problem.	10	2

5. Attempt any *one* part of the following: **10x1=10**

a.	Define the membership function and state its importance in fuzzy logic. Also discuss the features of membership functions.	10	3
b.	Explain two important inferring procedures.	10	3

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6. Attempt any *one* part of the following: 10x1=10

a.	Explain in brief different attributes of predicate logic	10	4
b.	Define fuzziness of fuzzy set and what is a fuzzy function?	10	4

7. Attempt any *one* part of the following: 10x1=10

a.	Discuss about the genetic operators. What are the roles of genetic operators in GA?	10	5
b.	Explain why mutation is done in genetic algorithm? Explain types of mutation.	10	5