ECHELON INSTITUTE OF TECHNOLOGY, Faridabad

Department of Computer Science and Engineering

Assignment No– 1 : Even Semester 2023-24

Course/Branch	**: B. Tech-CSE**	**Semester**	**: 6**
Subject Name	**: Soft Computing**	**Max. Marks**	**: 20**
Subject Code	**: PEC-CS-D-602**		

NOTE: Last date of submission:29/2/2024

On completion of this course, the student will be able to

CO-1 : To introduce soft computing concepts and techniques and foster their abilities in designing appropriate technique for a given scenario.
CO-2 : To implement soft computing based solutions for real-world problems.

I. Descriptive questions: **{5marks*2=10}**

1. Explain the importance of studying Soft Computing.
2. What do understand by Fuzzy Logic?

II. Multiple Choice questions:

4 marks

What is the correct answer?

3. If A and B are two fuzzy sets with membership functions μA(x) = {0.2, 0.5, 0.6, 0.1, 0.9} μB(x) = {0.1, 0.5, 0.2, 0.7, 0.8} Then the value of μ(A∩B)

will be

(A) {0.2, 0.5, 0.6, 0.7, 0.9}

(B) {0.2, 0.5, 0.2, 0.1, 0.8}

(C) {0.1, 0.5, 0.6, 0.1, 0.8}

(D) {0.1, 0.5, 0.2, 0.1, 0.8}

4 marks

4. Consider a fuzzy set A defined on the interval x=[0,10] of integers by the membership function.
μA(x) = x / x+ 2
α cut corresponding to α = 0.5 will be
(A) { 0,1,2,3,4,5,6,7,8,9,10}
(B) {1,2,3,4,5,6,7,8,9,10}
(C) {2,3,4,5,6,7,8,9,10}

(D) { }

2 marks

5. The height h(A) of a fuzzy set A is defined as h(A) =sup A(x) where x belongs to A. Then the fuzzy set A is called normal when

(A)h(A)=0

(B)h(A)<0

(C)h(A)=1

(D)h(A)<1