**COMPUTER ENGINEERING DEPARTMENT**

**AI&SC Assignment 2**

COURSE: **B.E.** YEAR: **2020-2021** SEMESTER: **VII** DEPT: **Computer Engineering**

SUBJECT CODE: **CSC703** DATE OF ASSIGNMENT: **22-10-2021** ===========================================================================

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| CLASS: **COMPS BE B** | DATE OF SUBMISSION: **22-10-2021** |

| **Sr. No.** | **Questions** |
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| **1** | An engineer is testing the properties, strength and weight of steel. Suppose he has two fuzzy sets, A defined on the universe of discourse (s1,s2,s3} and B defined on a universe of discourse {w1,w2,w3). The membership of A and B are given by uA={(s1,1),(s2,0.5),(s3,0.2); and uB={(w1,1),(w2,0.5),(w3,0.3)   1. Find the Cartesian product of A and B i.e R = A X B. 2. Suppose C={(s1,0.1),(s2,0.6),(s3,1)}. Find S =C X B. 3. Find C o R using Max-min composition. 4. Find C . R using max-product composition. |
| **2** | Design a fuzzy logic controller stem for a tipping example. Consider service and food quality rated between 0 and 10. Use this to leave a tip of 25%. |
| **3** | Use perceptron learning rule for computing weights after one iteration for the data given below:  X1=[1 -2 0-1]T; X2=[0 1.5 -0.5 - 1]T; X3=(-1 10.5 -1]T.  Initial weight W1=[1 - 1 0 0.5].  The learning constant is given by c=0.1.  The teacher's desired responses for X1, X2, X3 are [-1,-1,1] respectively. |
| **4** | Discuss EBPTA algorithm with the help of flowchart. |
| **5** | Write a short note on ANFIS. |
| **6** | Explain genetic algorithm steps with the help of a flowchart. |

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**Signature of Student**