

BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)
B.Tech.Sem - VIII ELECTRONIC : WINTER- 2022
SUBJECT : FUZZY LOGIC & NEURAL NETWORK

Day : Tuesday

Time : 02:30 PM-05:30 PM

Date : 29-11-2022

W-13407-2022

Max. Marks : 60

N. B. :

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagrams **WHEREVER** necessary.

Q.1 Define T-norms and T-conorms with their properties. (10)

OR

Q.1 Define fuzzy set boundary with membership functions. (10)

Q.2 Write following fuzzy implication rules : (10)
i) Dienes-Rescher ii) Mamdani

OR

Q.2 Define following Fuzzy inference models (10)
i) Sugeno fuzzy model ii) Tsukamoto fuzzy model

Q.3 Design vacuum cleaner application based on fuzzy logic controller. (10)

OR

Q.3 Define role of knowledge base, fuzzification, defuzzification in fuzzy logic controller. Construct IF-THEN rules for washing machine application. (10)

Q.4 Write gradient descent algorithm in detail. (10)

OR

Q.4 Implement logical OR function with Mc culloch-Pits neuron model. (10)

Q.5 Define multilayer perceptron. Write algorithm for Adaline & Madeline. (10)

OR

Q.5 Write algorithm for back propagation. (10)

Q.6 Write in detail any one application of ANFIS. (10)

OR

Q.6 Design and implement one application based on hybrid learning. (10)