SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL No:

Total Pages: 02

B.Tech. || ECE || 7th Sem
Neural Networks & Fuzzy Logic
Subject Code: BTEC-916
Paper ID: _____

Time allowed: 3 Hrs

Max Marks: 60

Important Instructions:
- All questions 06 are compulsory
- Assume any missing data

PART A (2×10)

Q. 1.   Answer in brief: All COs

(a)   Describe backpropagation neural networks.

(b)   What is the role of activation function in neural behavior?

(c)   What is delta learning rule?

(d)   What is Hebb's learning law?

(e)   Differentiate feedforward and recurrent neural networks.

(f)   Differentiate competitive and reinforcement learning in neural network training?

(g)   Why and when we should prefer to use fuzzy logic?

(h)   What is Sugeno inference technique?

(i)   Define implication operation in fuzzy logic systems.

(j)   What is the importance of defuzzification process?

PART B (8×5)

Q. 2.   (a)   How artificial neural model structure is similar to that of biological   CO1

neuron.

(b)   Explain structure and working of McCulloch-Pitts neural model.

OR

(a)   Discuss various learning techniques used in neural networks.   CO1

(b)   What is knowledge representation?

Q. 3. (a) What is k-means clustering algorithms? Explain. CO2

(b) What are associative memories in neural networks?

OR

Explain various learning laws used in training of artificial neural networks CO2 with suitable mathematical expressions?

Q. 4. (a) Discuss the architecture of Radial Basis Function Neural Network CO3

(b) What is ART in neural networks? Explain.

OR

(a) Describe structure and working of CMAC networks. CO3

(b) What are counter-propagation neural networks? Explain.

Q. 5. What are fuzzy set operators? How their resultants differ from crisp set CO4 operations?

OR

What are different building blocks of a fuzzy logic system? Explain their role. CO4

Q. 6. What are various design steps involved in fuzzy logic systems. Describe CO4 defuzzification approaches.

OR

How fuzzy logic works in Antilock Braking System? Explain CO4