

BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(END SEMESTER EXAMINATION MO/SP2022)

CLASS: BTECH  
BRANCH: EEE

SEMESTER : VII  
SESSION : MO/2022

TIME: 03 Hours

SUBJECT: EE427 SOFT COMPUTING TECHNIQUES

FULL MARKS: 50

**INSTRUCTIONS:**

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
  2. Attempt all questions.
  3. The missing data, if any, may be assumed suitably.
  4. Tables/Data handbook/Graph paper etc., if applicable, will be supplied to the candidates
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Q.1(a)	What is a fuzzy set?	[2]	CO1	BL1
Q.1(b)	What are the important features of a membership function.	[3]	CO1	BL2
Q.1(c)	Discuss uncertainty & imprecision in information with a suitable example.	[5]	CO2	BL3
Q.2(a)	What are the important Properties of fuzzy sets?	[2]	CO2	BL2
Q.2(b)	Explain crisp relation & Fuzzy relations.	[3]	CO3	BL4
Q.2(c)	Consider the fuzzy sets A and B defined on the interval $X=[0,5]$ of real numbers, by the membership grad functions.  Determine the mathematical formula and graphs of the membership grade function s of (i) (ii)	[5]	CO3	BL6
Q.3(a)	What are Artificial Neural Networks?	[2]	CO1	BL1
Q.3(b)	What is Perceptron Learning Algorithm?	[3]	CO4	BL3
Q.3(c)	Explain Multilayer feedforward network with a suitable diagram.	[5]	CO1	BL5
Q.4(a)	What do you mean by Backpropagation?	[2]	CO2	BL2
Q.4(b)	What is the difference between Forward propagation and Backward Propagation in Neural Networks?	[3]	CO2	BL4
Q.4(c)	How does the learning rate affect the training of the Neural Network?	[5]	CO4	BL5
Q.5(a)	What is Unsupervised learning?	[2]	CO2	BL1
Q.5(b)	Different Types of Artificial Neural Networks?	[3]	CO1	BL1
Q.5(c)	Explain Vector Quantization.	[5]	CO4	BL4

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