Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

SIXTH SEMESTER B.TECH DEGREE EXAMINATION(R&S), MAY 2019

Course Code: EE368

Course Name: SOFT COMPUTING

Max. Marks: 100 Duration: 3 Hours

PART A

Answer all questions, each carries5 marks. Marks

1		Compare the structure of a biological neuron with an artificial neuron.	(5)
2		What is a perceptron? Explain the training process in perceptron.	(5)
3		With a neat block diagram explain the functionality of a Fuzzy Expert System.	(5)
4		Compare and contrast Mamdani and Sugeno fuzzy control models.	(5)
5		Briefly explain any two methods used for selection process in GA	(5)
6		Explain different types of crossover used in a genetic algorithm	(5)
7		What is a linear learning machine	(5)
8		List out any 5 applications of support vector machines	(5)

PART B

Answer any two full questions, each carries10 marks.

9		Explain back propagation algorithm with the help of a block diagram and a suitable example	(10)
10	a)	Describe the various soft computing constituents	(5)
	b)	List out any five operations possible on fuzzy sets	(5)
11	a)	Explain reinforcement learning with the help of a block diagram	(5)
	b)	What is adaptive resonance architecture	(5)

PART C

Answer any two full questions, each carries10 marks.

12		Explain Adaptive Neuro-Fuzzy Inference System (ANFIS) with the help of a block diagram	(10)
13	a)	Describe classification tree	(5)
	b)	Explain rule-base structure identification in a fuzzy system	(5)
14		Explain any one data clustering algorithm	(10)

PART D

Answer any two full questions, each carries 10 marks.

15 Describe Machine Learning. Write any three applications. (10)

16 a) What is the role of 'mutation' in GA based optimisation process. What is the usual range of probability value given for mutation process? (5)

b) Explain support vector regression. List any 2 applications. (5)

Describe the steps involved in solving an optimisation problem using Genetic Algorithm. Illustrate the steps with a suitable example. (10)

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