SIDDHARTH GROUP OF INSTITUTIONS :: PUTTUR
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QUESTION BANK (DESCRIPTIVE)

Subject with Code :SCT (16EE7503) **Course & Branch**: M.Tech - CS

Year & Sem: M.Tech I-Sem (CS) **Regulation:** R16

UNIT –I

1	(a)	Explain about biological neuron.	5M
	(b)	Explain about the applications of artificial neural networks.	5M
2	(a)	Explain about artificial neuron.	5M
	(b)	Explain about the characteristics of artificial neural networks.	5M
3		Explain about the basic models of artificial neural networks.	10M
4	(a)	Explain about the Mc Culloch-Pitts neuron model.	5M
	(b)	Briefly explain about the characteristics of artificial neural networks.	5M
5	(a)	Describe the applications of ANN.	5M
	(b)	Explain the characteristics of ANN.	5M
6		Explain in detail the architecture of Mc Culloch – Pitts neuron model and also realize 3-input NAND gate, NOR gate using the above neuron model.	10M
7	(a)	Explain the operations of artificial neuron.	5M
	(b)	Discuss about the supervised learning strategy	5M
8	(a)	What are the types of neuron activations functions?	5M
	(b)	What are the learning strategies for artificial neural networks?	5M
9		Explain about the classification taxonomy of artificial neural networks	10M
10		Explain about the Perceptron training algorithms	10M

UNIT –II

1	(a)	Explain about the back propagation network.	5M
	(b)	Explain about back propagation learning.	5M
2		Derive output equations and weight update equations for a multilayer feed	

		forward neural network using back propagation algorithm.	10M
3	(a)	What are the limitations of "Perceptron" model? Explain.	5M
	(b)	Explain the architectural details and algorithm of "ADALINE" model	5M
4		Explain the concept of associative memory in ANN.	10M
5		Explain about the training algorithms for pattern association.	10M
6		Explain about the bidirectional associative memory	10M
7		Discuss about the hetero associative memory network.	10M
8		Explain the basic architecture and algorithm of discrete Hopfield networks.	10M
9		Briefly explain about the Hopfield networks.	10M
10	(a)	Write short notes on Hopfield networks.	5M
	(b)	Describe hetero-associate network.	5M

UNIT –III

1		Explain classical set operations in detail.	10M
2	(a)	What are the properties, operations of classical sets?	5M
	(b)	Explain the relations of classical sets.	5M
3	(a)	Explain about the operations of fuzzy sets.	5M
	(b)	Explain about the fuzzy relations.	5M
4	(a)	What are the properties of fuzzy sets?	5M
	(b)	Explain about the cardinalities in fuzzy sets	5M
5	(a)	Differentiate between classical sets and fuzzy sets.	5M
	(b)	Explain about the membership functions in fuzzy sets.	5M
6		Write a brief notes on the following:	
	(a)	Membership value assignment.	5M
	(b)	Decision making system.	5M
7		Explain crisp and fuzzy implication rules.	10M
8		What is meant by membership function? Explain in detail various membership functions of fuzzy logic systems.	10M
9.		Explain fuzzy composition operations.	10M
10		Explain decision making using fuzzy composition operations	10M

UNIT –IV

1	What is fuzzification? Explain about the defuzzification to crisp sets.	10M
2	Explain about the development of rule base and decision making system.	10M
3	Define fuzzification. Explain about the defuzzification methods.	10M
4	What are the basic components of a fuzzy logic system? Explain each of them in detail.	10M
5	Explain the following components of fuzzy logic system: (a) Fuzzification. (b) Rule base. (c) Defuzzification.	10M
6	Explain in detail various components of "Fuzzy Logic System".	10M
7.	Explain applications of fuzzy logic in control system with one example.	10M
8	Explain working of Greg-Viot fuzzy cruise controller.	10M
9	Explain different methods of defuzzification	10M
10.	Explain air conditioner control using fuzzy logic	10M

UNIT –V

1	Explain about the basic operations and technologies in genetic algorithms.	10M
2	Explain the differences between traditional and genetic algorithm.	10M
3	Explain about the basic operators and basic technologies in genetic algorithm.	10M
4 (a)	Explain about the mutation operator.	5M
(b)	Explain about the basic operators in genetic algorithms.	5M
5 (a)	Differentiate genetic algorithm verses traditional algorithm.	5M
(b)	Describe the applications of genetic algorithm.	5M
6	What are the basic operators of genetic algorithm? Explain the operational procedure of GA.	10M
7	Explain in detail about various operators of GA and also explain GA evaluation procedure.	10M
8	Explain different cross over operations performed in GA	10M

9.	Explain different reproduction operators used in GA	10M
10.	Explain need of mutation operator in GA and its operation	10M

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Prepared by: **N. Ramesh Raju**.