SIDDHARTH GROUP OF INSTITUTIONS :: PUTTUR
Siddharth Nagar, Narayanavanam Road – 517583

QUESTION BANK (DESCRIPTIVE)

Subject with Code: Soft Computing (18CS5004) **Course & Branch**: M.Tech - CSE

Year & Sem: I M.Tech II-Sem (CSE) **Regulation:** R18

UNIT –I

1	(a)	Discuss about biological neuron. In details	6M
	(b)	Briefly discuss about the applications of artificial neural networks.	6M
2	(a)	Write short notes on artificial neuron.	6M
	(b)	Define the characteristics of artificial neural networks.	6M
3		Explain about the basic models of artificial neural networks.	12M
4	(a)	Explain about the Mc Culloch-Pitts neuron model.	6M
	(b)	Briefly explain about the characteristics of artificial neural networks.	6M
5	(a)	Describe the applications of ANN.	6M
	(b)	Write short note on the characteristics of ANN.	6M
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.	12M
7	(a)	Explain the operations of artificial neuron.	6M
	(b)	Discuss about the supervised learning strategy	6M
8	(a)	What are the types of neuron activations functions?	6M
	(b)	What are the learning strategies for artificial neural networks?	6M
9		What are the classification taxonomy of artificial neural networks	12M
10		Discuss about the Perceptron training algorithms	12M

UNIT –II

1	(a)	Write short notes on the back propagation network.	6M
	(b)	Briefly discuss about back propagation learning. In details	6M
2		Derive output equations and weight update equations for a multilayer feed	

		forward neural network using back propagation algorithm.	12M
3	(a)	What are the limitations of "Perceptron" model? Explain.	6M
	(b)	Explain the architectural details and algorithm of "ADALINE" model	6M
4		Explain the concept of associative memory in ANN.	12M
5		Explain about the training algorithms for pattern association.	12M
6		Explain about the bidirectional associative memory	12M
7		Discuss about the hetero associative memory network.	12M
8		Explain the basic architecture and algorithm of discrete Hopfield networks.	12M
9		Briefly explain about the Hopfield networks.	12M
10	(a)	Write short notes on Hopfield networks.	6M
	(b)	Describe hetero-associate network.	6M

UNIT –III

1		Briefly explain about classical set operations in detail.	12M
2	(a)	What are the properties, operations of classical sets?	6M
	(b)	Explain the relations of classical sets.	6M
3	(a)	Discuss about the operations of fuzzy sets.	6M
	(b)	Describe about the fuzzy relations.	6M
4	(a)	What are the properties of fuzzy sets?	6M
	(b)	Explain about the cardinalities in fuzzy sets	6M
5	(a)	Differentiate between classical sets and fuzzy sets.	6M
	(b)	Explain about the membership functions in fuzzy sets.	6M
6		Write a brief notes on the following:	
	(a)	Membership value assignment.	6M
	(b)	Decision making system.	6M
7		Explain crisp and fuzzy implication rules.	12M
8		What is meant by membership function? Explain various membership functions of fuzzy logic systems in detail.	12M
9.		What are fuzzy composition operations? Explain in details	12M
10		Discuss about decision making using fuzzy composition operations	12M

UNIT –IV

1	What is fuzzification? Explain about the defuzzification to crisp sets.	12M
2	Explain about the development of rule base and decision making system.	12M
3	Define fuzzification. Explain about the defuzzification methods.	12M
4	What are the basic components of a fuzzy logic system? Explain each of them in detail.	12M
5	Write short notes the following components of fuzzy logic system: (a) Fuzzification. (b) Rule base. (c) Defuzzification.	12M
6	Explain in detail various components of "Fuzzy Logic System".	12M
7.	Explain applications of fuzzy logic in control system with one example.	12M
8	Explain working of Greg-Viot fuzzy cruise controller.	12M
9	Explain different methods of defuzzification	12M
10.	Write short notes on air conditioner control using fuzzy logic	12M

UNIT –V

1	What are the basic operations and technologies in genetic algorithms?	12M
2	Discuss about the differences between traditional and genetic algorithm.	12M
3	Briefly Explain about the basic operators and basic technologies in genetic algorithm.	12M
4 (a)	Write short notes on mutation operator.	6M
(b)	What are the basic operators in genetic algorithms? Explain in Details	6M
5 (a)	Differentiate genetic algorithm verses traditional algorithm.	6M
(b)	Describe the applications of genetic algorithm.	6M
6	What are the basic operators of genetic algorithm? Explain the operational procedure of GA.	12M
7	Discuss in detail about various operators of GA and also explain GA evaluation procedure.	12M
8	Explain different cross over operations performed in GA	12M

9. What are the different reproduction operators used in GA 12M

10. Briefly Explain need of mutation operator in GA and its operation 12M

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Prepared by: **N. Prakash, Professor,Dept. of CSE**