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

Subject with Code :NNFL (16EE4305)	**Course & Branch**: M.Tech - PE
Year & Sem: M.Tech I-Sem (PE)	**Regulation:** R16

UNIT –I

1 (a)   Explain about biological neuron.   5 M

   (b)   Explain about the applications of artificial neural networks.   5 M

2 (a)   Explain about artificial neuron.   5 M

   (b)   Explain about the characteristics of artificial neural networks.   5 M

3   Explain about the basic models of artificial neural networks.   10 M

4 (a)   Explain about the Mc Culloch-Pitts neuron model.   5 M

   (b)   Briefly explain about the characteristics of artificial neural networks. 5 M

5 (a)   Describe the applications of ANN.   5 M

   (b)   Explain the characteristics of ANN.   5 M

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.   10 M

7 (a)   Explain the operations of artificial neuron.   5 M

   (b)   Discuss about the supervised learning strategy   5 M

8 (a)   What are the types of neuron activations functions?   5 M

   (b)   What are the learning strategies for artificial neural networks?   5 M

9   Explain about the classification taxonomy of artificial neural networks   10 M

10.   Discuss activation function dynamics.   10 M

UNIT –II

1 (a) Explain about the back propagation network.   5 M

   (b)   Explain about back propagation learning.   5 M

2   Derive output equations and weight update equations for a multilayer feed

        forward neural network using back propagation algorithm.   10 M

3 (a)   What are the limitations of "Perceptron" model? Explain.   5 M

  (b)   Explain the architectural details and algorithm of "ADALINE" model   5 M

4   Explain about the Perceptron training algorithms.   10 M

5.   Explain why perceptron could not solve XOR problem.   10 M

6.   Explain Gradient descent method used in back propogation algorithm.   10 M

7.   Explain computations in multi layer feed forward networks.   10 M

8.   Discuss the limitations of Perceptron networks.   10 M

9.   Discuss the importance of momentum coefficient in back propogation learning. 10 M

10.   Discuss about radial basis functions.   10 M

UNIT –III

1.   Explain the concept of associative memory in ANN.   10 M

2.   Explain about the training algorithms for pattern association.   10 M

3.   Explain about the bidirectional associative memory.   10 M

4.   Discuss about the hetero associative memory network.   10 M

5.   Explain the basic architecture and algorithm of discrete Hopfield networks. 10 M

6.   Briefly explain about the Hopfield networks.   10 M

7. (a)   Write short notes on Hopfield networks.   5 M

  (b)   Describe hetero-associate network.   5 M

8.   Discuss storage and recall algorithms in auto associative memory.   10 M

9.   Discuss storage and recall algorithms in hetero associative memory.   10 M

10.   Discuss storage and recall algorithms in Hopfield network.   10 M

UNIT –IV

1   Explain classical set operations in detail.   10 M

2 (a)   What are the properties, operations of classical sets?   5 M

  (b)   Explain the relations of classical sets.   5 M

3 (a)   Explain about the operations of fuzzy sets.   5 M

  (b)   Explain about the fuzzy relations.   5 M

4 (a)   What are the properties of fuzzy sets?   5 M

(b) Explain about the cardinalities in fuzzy sets   5 M

5 (a) Differentiate between classical sets and fuzzy sets.   5 M

   (b) Explain about the membership functions in fuzzy sets.   5 M

6   Write a brief notes on the following:

    (a) Membership value assignment.   5 M

    (b) Decision making system.   5 M

7   Explain briefly about self organizing feature maps.   10 M

8.   Distinguish between ART1 and ART2.   10 M

9.   What is meant by membership function? Explain in detail various membership functions of fuzzy logic systems.   10 M

10   Explain decision making using fuzzy composition operations.   10 M

<u>UNIT –V</u>

1   What is fuzzification? Explain about the defuzzification to crisp sets.   10 M

2   Explain about the development of rule base and decision making system.   10 M

3   Define fuzzification. Explain about the defuzzification methods.   10 M

4   What are the basic components of a fuzzy logic system? Explain each of them in detail.   10 M

5   Explain the following components of fuzzy logic system: 10 M

    (a) Fuzzification.

    (b) Rule base.

    (c) Defuzzification.

6   Explain in detail various components of "Fuzzy Logic System".   10 M

7   Briefly explain about the artificial neural networks based short term load forecasting.   10 M

8 (a) Explain about the fuzzy logic based unit commitment.   5 M

   (b) Explain about the load flow studies.   5 M

9.   Explain working of Greg-Viot fuzzy cruise controller.   10 M

10.   Discuss Air conditioning control through fuzzy logic.   10 M

Prepared by: **<u>N. Ramesh Raju</u>**.