Question Bank

ARTIFICIAL INTELLIGENCE (BTEC-908A-18)

Short Questions

1. Define artificial neural network.
2. List out the differences between ANN and BNN
3. Define Weight.
4. Define Activation function
5. What are the types of activation function
6. What are the types of sigmoid function
7. What are the application of Neural Networks
8. Define Bias
9. What is the function of synaptic gap
10. Define threshold
11. What are dendrites
12. Define training
13. What are the types of training
14. Define learning
15. What are different types of learning rules
16. Define architecture
17. Draw the simple model for an artificial neuron.
18. What are fundamental building blocks of the BNN
19. Difference btw supervised and unsupervised
20. Define the term 'axon'.
21. Write about 'synapse'.
22. Give two examples for the application of ANN.
23. Draw a typical McCulloch-Pitts neuron model.
24. Name two learning rules.
25. Write briefly about supervised learning.
26. Define preceptron.
27. What is meant by multilayer ANN?
28. List the assumptions that give way for McCulloch-Pitts theory.

Long Questions

1. Explain briefly the operation of biological neural network with a simple sketch.
2. Discuss supervised learning and unsupervised learning.
3. Describe preceptron learning rule and delta learning rule.
4. Write about Hebbian learning and Widrow-Hoft learning rule.

5. Describe winner-take-all learning rule and outstar learning rule.
6. Describe back propagation and features of back propagation.
7. Describe McCulloch-Pitts neuron model in detail.
8. Explain the Architecture and Algorithm of ADALINE
9. Explain the Architecture and Algorithm of MADLINE
10. Write the various application of neural network in detail.
11. a) Explain the Various Learning processes used in the neural networks
    b) Design a perceptron to Implement the truth table of AND gate.Use bipolar inputs and target.
12. Write about performance of back propagation learning.
13. What are the limitations of back propagation learning? Explain in detail.
14. Discuss a few tasks that can be performed by a back propagation network.
15. Discuss in detail the generalized delta rule and the updation of hidden layer and output layer.
16. Describe the Characteristics of Continuous Hopfield memory and discuss how it can be used to solve Traveling salesman Problem.
17. Explain the algorithm of BPN with its Architecture.
18. Discuss varies properties and operations on crisp relation
19. Describe fuzzy relation.
20. Explain the operation of fuzzy sets with a suitable example.
21. Write about conditional fuzzy proposition and unconditional fuzzy proposition.
22. Explain fuzzy associate memory (FAM) with a suitable example.
23. Define defuzzification and explain the different defuzzification methods.
24. Explain fuzzy Cartesian and composition with a suitable example.
25. Explain the concept of fuzzy set with suitable examples.
26. Explain the terms
    a.Fuzziness
    b.Power set.
    c.Union of two sets. d.Complement
    of two sets. e.Difference of two sets.
27. Write the components of a fuzzy logic system and explain them.
28. Explain min-max method of implication with a suitable example.
29. Explain monotonic (proportional) reasoning.
30. Who is a knowledge engineer? Write about extracting information from knowledge engineer.
31. Explain the various ways by which membership values can be assigned to fuzzy variables.
32. Discuss the various special features of the membership function.
33. With a neat sketch discuss the major components of fuzzy controller.
34. Write about genetic algorithm and its application.
35. Write the different deterministic form of classical decision-making theories and explain any two.
36. Write short notes on
    a. Lambda-cut.   b. Knowledge base.

37. Explain the importance of fuzzi logic control in various fields.

38. Explain the fuzzy logic is being implemented for image processing.

39. Discuss the home heating system with fuzzy logic control.

40. Explain the technique "fuzzy logic blood pressure during anesthesia" in a brief manner.

41. What are the components of fuzzy logic controland explain them in detail with block diagram?

42. What do you mean by neuro fuzzy controller and explain in detail.

43. List out the importance of the neuro fuzzy controller in other fields.

44. Explain in detail any one application of neuro fuzzy techniques in power systems.

GENETIC ALGORITHMS

1   Explain about the basic operations and technologies in genetic algorithms.

2   Explain the differences between traditional and genetic algorithm.

3   Explain about the basic operators and basic technologies in genetic algorithm.

4   Explain about the mutation operator.

5   Explain about the basic operators in genetic algorithms.

6   Differentiate genetic algorithm verses traditional algorithm.

7   Describe the applications of genetic algorithm.

8   What are the basic operators of genetic algorithm? Explain the operational procedure of GA.

9   Explain in detail about various operators of GA and also explain GA evaluation procedure.

10 Explain different cross over operations performed in GA

11 Explain different reproduction operators used in GA

12 Explain need of mutation operator in GA and its operation