QUESTION BANK (NNFL)

PART A

1. Define the term 'axon'.
2. Write about 'synapse'.
3. Define artificial neural network.
4. Give two examples for the application of ANN.
5. Draw a typical McCulloch-Pitts neuron model.
6. Name two learning rules.
7. Write briefly about supervised learning.
8. Define preceptron.
9. What is meant by multilayer ANN?
10. Define the term "back propagation".
11. What do you mean by networks?
12. Draw the diagram for boltzman machine.
13. Draw the diagram for hop field networks.
14. What is meant by feedback networks?
15. What do you by transient response?
16. List out any two application of neural networks used for controlling.
17. Explain boltzman machine.
18. List out the uses of hop field networks.
19. Give any two application of boltzman machine.
20. Define probability.
21. Name the three types of ambiguities.
22. Define classical set.
23. What is meant by universe of discourse?
24. With a neat sketch write about non non-conventional fuzzy set.
25. Name the different fuzzy set operations.
26. Define fuzziness.
27. Write De Morgan's law.
28. Define power set.
29. Define fuzzification.
30. Define membership function.
31. Mention the properties of ʎcut .
32. What is meant by implication?
33. What is the role of membership function in fuzzy logic?
34. Define Lambda-cuts for fuzzy set.
35. Write about classical predicate logic.
36. Define tautologies.
37. List down common tautologies.

38. Define adopticee fuzzy system.
39. What for genetic algorithm is used?
40. What are the rules based format used to represent the fuzzy information?
41. What is image processing?
42. Define image and pixel.
43. State two assumptions in fuzzy control system design.
44. Name the principal design elements in a general fuzzy logic control system.
45. Draw a schematic diagram of a typical closed-loop fuzzy control situation.
46. Define "sensor" connected with fuzzy control system.
47. Name the two control system.
48. A simple fuzzy logic control system has some features: Name any two.
49. Write two sentences about neuro fuzzy controller.

PART B

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. Write about performance of back propagation learning. 9. What are the limitations of back propagation learning? Explain in detail.
9. Discuss a few tasks that can be performed by a back propagation network.
10. Distinguish between hop field continuous and discrete models.
11. Bring out the salient features of boltzman machine.
12. What is meant by converter propagation? Explain briefly.
13. Explain briefly the back propagation technique.
14. Explain how the ANN can be used for process identification with neat sketch.
15. Discuss the step by step procedure of back propagation learning algorithm in detail.
16. State the advantages and disadvantages of back propagation.
17. Explain the transient response of continuous time networks.
18. Explain the feedback networks of ANN for controlling process.
19. Explain how ANN can be used for neuro controller for inverted pendulum.
20. Differentiate fuzzy set from classical set and name the properties of classical (crisp) sets.
21. A = {(1/2) + (0.5/3) + (0.3/4) + (0.2/5)},
    B = {(0.5/2) + (0.7/3) + (0.2/4) + (0.4/5)} Calculate the several operation of the fuzzy set.
22. Discuss varies properties and operations on crisp relation.

23. Describe fuzzy relation.
24. Explain the operation of fuzzy sets with a suitable example.
25. Write about conditional fuzzy proposition and unconditional fuzzy proposition.
26. Explain fuzzy associate memory (FAM) with a suitable example.
27. Define defuzzification and explain the different defuzzification methods.
28. Explain fuzzy Cartesian and composition with a suitable example.
29. Explain the concept of fuzzy set with suitable examples.
30. Explain the terms
    a.Fuzziness
    b.Power set.
    c.Union of two sets.
    d.Complement of two sets.
    e.Difference of two sets.
31. Write the components of a fuzzy logic system and explain them.
32. Explain min-max method of implication with a suitable example.
33. Explain monotonic (proportional) reasoning.
34. Who is a knowledge engineer? Write about extracting information from knowledge engineer.
35. Explain the various ways by which membership values can be assigned to fuzzy variables.
36. Discuss the various special features of the membership function.
37. With a neat sketch discuss the major components of fuzzy controller.
38. Write about genetic algorithm and its application.
39. Write the different deterministic form of classical decision-making theories and explain any two.
40. Write short notes on
    a. Lambda-cut.   b. Knowledge base.
41. Explain the importance of fuzzi logic control in various fields.
42. Explain the fuzzy logic is being implemented for image processing.
43. Discuss the home heating system with fuzzy logic control.
44. Explain the technique "fuzzy logic blood pressure during anesthesia" in a brief manner.
45. What are the components of fuzzy logic controland explain them in detail with block diagram?
46. What do you mean by neuro fuzzy controller and explain in detail.
47. List out the importance of the neuro fuzzy controller in other fields.
48. Explain in detail any one application of neuro fuzzy techniques in power systems.