



- Notes: 1. Due credit will be given to neatness and adequate dimensions.
2. Assume suitable data wherever necessary.
3. Illustrate your answer necessary with the help of neat sketches.

1. a) Compare and contrast biological Neuron and Artificial Neuron. 6
b) Explain the following. 8
i) Input Layer computation.
ii) Output Layer computation.

OR

2. a) Define activation function. What for they are used? Explain various activation function with their characteristics. Why Sigmoidal activation function is most popular? Give reasons. 7
b) Draw and explain the structure of MADALINE network. 7
3. What are the three layers in the original perceptron? Draw architecture of Multi-layer perceptron and explain the working of perceptron in detail. 13

OR

4. a) Explain the concept of linear separability. Give examples. 6
b) Explain Gradient Descent based procedure for ANN. 7
5. a) Explain exponential BAM in brief. 6
b) Explain application of Associative memory in character recognition. 7

OR

6. a) Explain. 8
i) Auto-correlation.
ii) Hetero-correlation.
b) Explain multiple training encoding strategy. 5
7. Explain the classical Adaptive resonance theory Network architecture with an example. 13

OR

8. a) Explain Adaptive Resonance Theory 2 architecture. 7
b) Explain cluster structure with an example. 6

9. a) Explain operations on Fuzzy relations. 7
b) Explain properties of Fuzzy sets. 7

OR

10. a) Differentiate between Fuzzy set and Crisp set. 7
b) Explain Fuzzy Cartesian product. 7
11. a) Explain Fuzzy Rule based system. 6
b) Explain Fuzzy Inference system (FIS) in brief. 7

OR

12. a) Explain interpretation of predicate logic with an example. 7
b) Explain De- Fuzzification methods in brief. 6
