

Total No. of Questions : 12]

SEAT No. :

P1915

[Total No. of Pages : 3

[5059] - 238

B.E. (I.T.) (Semester - II)

Neural Network and Expert Systems
(2008 Pattern) (Elective - IV)

Time : 3 Hours]**[Max. Marks : 100****Instructions to the candidates:**

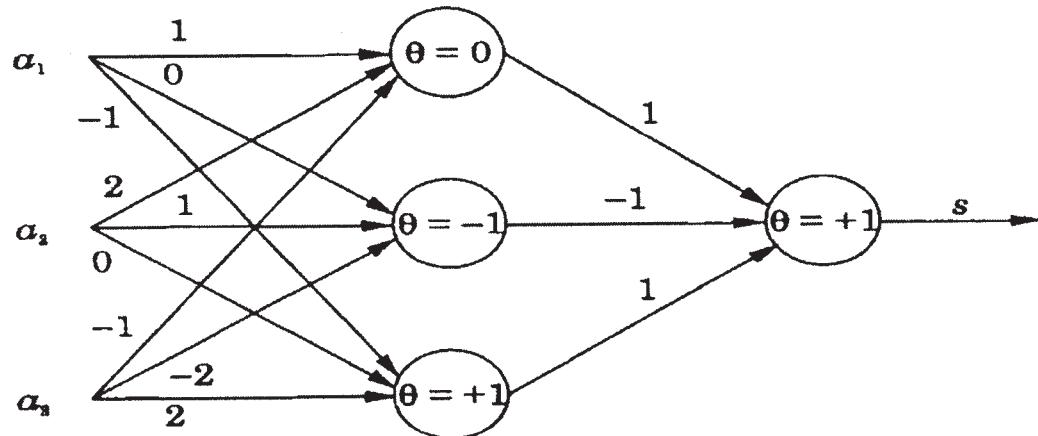
- 1) Answers to the two sections should be written in separate answer books.
- 2) Figures to the right indicate full marks.
- 3) Assume suitable data, if necessary.

SECTION - I

- Q1)** a) Implement NAND and NOR gate using Mculloch Pitt's neurons. [7]
 b) Explain, with examples, following pattern recognition tasks: [9]
 i) Association.
 ii) Classification.
 iii) Clustering.

OR

- Q2)** a) What do you mean by hard and soft activation function? State its types. [8]
 b) What is MP Neuron Model? Give the output of the following network for the input $[1 \ 1 \ 1]^T$ [8]



P.T.O.

- Q3)** a) Explain following learning laws in detail. [9]
- i) Hebb's Learning law.
 - ii) Perceptron learning law.
- b) Compare the paradigms : Supervised Learning and Unsupervised Learning. [7]

OR

- Q4)** a) Distinguish between linearly separable and linearly non-separable problems. What is limitation of perceptron. [8]
- b) What are feed forward neural networks? Explain pattern classification and regression using Multi-layer feed forward neural networks. [8]

- Q5)** a) Explain construction of optimal hyperplane for linearly separable pattern with respect to SVM. [9]
- b) What are RBF networks? How it is used to perform complex pattern classification task? [9]

OR

- Q6)** a) Explain radial basis function networks in the form of layered structure. [9]
- b) Write a short note on optimal hyperplane for non separable patterns. [9]

SECTION - II

- Q7)** a) What is Hopfield network? What are the applications of Hofield networks. [8]
- b) Explain Boltzman machine architecture together with the Boltzman learning law. [9]

OR

Q8) a) What is SOFM? Draw and explain its architecture. How training is done in SOFM? [9]

b) Write a short note on “Recurrent Neural Networks”. [8]

Q9) a) Explain the rule based architecture of expert system. [8]

b) What are the advantages in keeping knowledge base separate from control module in knowledge based system? [8]

OR

Q10) a) Explain with neat diagram blackboard system architecture and its components. [8]

b) What is uncertainty? Explain two approaches that deal with uncertainty problem. [8]

Q11) a) Explain how knowledge is represented in PROLOG? [9]

b) Write a short note on ELIZA? [8]

OR

Q12) a) List programming languages for AI problems. Comment on language constructs in LISP. [9]

b) Write a short note on MYCIN. [8]



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