SOLVED MODEL QUESTION PAPER (In Sem)

Artificial Neural Network

T.E. (AI&DS) Semester - VI (As Per 2019 Pattern)

Time : 1 Hour] [Maximum Marks : 30

N. B. :

i) Attempt Q.1 or Q.2, Q.3 or Q.4.

ii) Neat diagrams must be drawn wherever necessary.

iii) Figures to the right side indicate full marks.

iv) Assume suitable data, if necessary.

Q.1 a) *Draw and explain architecture of single layer feed forward network.* **(Refer section 1.5.1)** **[5]**

b) *What is activation functions ? Explain any one activation functions.* **(Refer section 1.6)** **[5]**

c) *Explain structure and working of biological neural network.* **(Refer section 1.3)** **[5]**

OR

Q.2 a) *Discuss history of neural network.* **(Refer section 1.2)** **[5]**

b) *Explain multilayer perceptron.* **(Refer section 1.8.2)** **[5]**

c) *What is recurrent neural network ? Explain.* **(Refer section 1.5.3)** **[5]**

Q.3 a) *What is gradient decent rules ? Explain vanishing gradient problem.* **(Refer section 2.5)** **[6]**

b) *What is auto-associative memory ? Explain difference between Auto-associative memory and hetero-associative memory.* **(Refer section 2.1)** **[9]**

OR

Q.4 a) *What is backpropagation ? Explain advantages and disadvantages of backpropagation.* **(Refer section 2.7)** **[6]**

b) *Define supervised learning. Explain advantages and disadvantages of supervised learning. Compare supervised and unsupervised learning.* **(Refer section 2.6)** **[9]**

SOLVED MODEL QUESTION PAPER (End Sem)

Artificial Neural Network

T.E. (AI&DS) Semester - VI (As Per 2019 Pattern)

Time : $2\frac{1}{2}$ Hours] [Maximum Marks : 70

N. B. :

i) *Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*

ii) *Neat diagrams must be drawn wherever necessary.*

iii) *Figures to the right side indicate full marks.*

iv) *Assume suitable data, if necessary.*

Q.1 a) *Discuss use of hopfield networks in associative learning.* **(Refer section 3.1)** [10]

b) *What are advantages and disadvantages of simulated annealing ?* **(Refer section 3.2)** [8]

OR

Q.2 a) *Explain tasks of feedforward ANN in pattern recognition.* **(Refer section 3.4)** [8]

b) *Explain adaptive resonance learning with its applications.* **(Refer section 4.1.2)** [10]

Q.3 a) *Write a note on competitive learning.* **(Refer section 4.1.1)** [5]

b) *How SOM works ?* **(Refer section 4.2)** [12]

OR

Q.4 a) *What are features of ART models.* **(Refer section 4.1.2)** [5]

b) *List advantages and disadvantages of SOM.* **(Refer section 4.2)** [4]

c) *Explain learning vector quantization.* **(Refer section 4.2)** [8]

Q.5 a) *Draw and explain basic structure of CNN.* **(Refer section 5.2)** [6]

b) *Write short note on SoftMax regression.* **(Refer section 5.7)** [6]

c) *Explain any one CNN model.* **(Refer section 5.13)** [6]

OR

Q.6 a) *What is multi-task learning ? Explain types of multi-task learning.* **(Refer section 5.10)** [6]

b) *What is deep learning ? Explain difference between keras and tensorflow.* **(Refer section 5.8)** [6]

c) *What is convolution operation ? Explain in detail.* **(Refer section 5.2)** [6]

Q.7 a) *What is the central concept of pattern recognition ? How ANN plays role in pattern recognition ?* **(Refer section 6.1)** [6]

b) *Write a note on Neocognitron.* **(Refer section 6.3)** [6]

c) *How printed characters are recognized using ANN ?* **(Refer section 6.2)** [5]

OR

Q.8 a) *List and discuss any two pattern recognition applications where ANN plays key role.* **(Refer section 6.1)** [6]

b) *Explain NETtalk application and use ANN in NETtalk application.* **(Refer section 6.4)** [6]

c) *Brief on vowel and consonants segment recognition, texture classification.* **(Refer section 6.5)** [5]

❑❑❑