[6403]-58

T.E. (Artificial Intelligence and Data Science)
ARTIFICIAL NEURAL NETWORK
(2019 Pattern) (Semester - VI) (317531)

Time : 2½ Hours]   *[Max. Marks : 70*

Instructions to the candidates:

1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q. 6, Q.7 or Q.8.*
2) *Neat diagrams must be drawn wherever necessary.*
3) *Figures to the right indicate full marks.*
4) *Assume Suitable data if necessary.*

Q1) a) Explain the Boltzmann machine and Boltzmann learning law. What are the limitations of the Boltzmann learning? **[9]**

b) Explain the concept of associative learning and associative memory in artificial neural networks. How is it related to pattern recognition? **[8]**

OR

Q2) a) Write a short note on : **[9]**

i) Pattern Classification

ii) Pattern mapping Task

b) What is simulated Annealing? Write and explain Simulated Annealing Algorithm. **[8]**

Q3) a) Enlist and explain components of Competitive learning Network. **[9]**

b) Describe the architecture of a Self-Organizing Map (SOM).Discuss the Competition, Cooperation, and synaptic adaptation process. **[9]**

OR

Q4) a) What is Vector Quantization. Explain linear vector quantization training algorithm. **[9]**

b) State and explain Properties of feature map in detail. Enlist Applications SOM. **[9]**

Q5) a) Draw and explain the architectures of Convolutional Neural Network. **[9]**

b) Write a short note on following CNN Model: **[9]**

i) LeNet-5

ii) AlexNet

OR

Q6) a) Explain the concept of Bias and Variance. Discuss the different combination of Bias and Variance. **[9]**

b) Explain any four Deep Learning Framework in detail. **[9]**

Q7) a) Explain the architecture of NET talk model. Discuss the application of to convert English text to speech. **[9]**

b) Discuss the application of ANN in pattern classification and recognition of Olympic game symbols. **[8]**

OR

Q8) a) Describe the Neocognitron model and its significance in the recognition of handwritten characters. **[9]**

b) Explain texture classification and segmentation in ANN. **[8]**

❧❧❧❧