

22/05/24 F/n

Reg. No. :

(6 pages)

Code No. : 10525 E Sub. Code : CECS 63

B.Sc. (CBCS). DEGREE EXAMINATION, APRIL, 2024.

Sixth Semester

Computer Science

Major Elective – NEURAL NETWORKS

(For those who joined in July 2021 – 2022)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which of the following is true?
 - (i) On average, neural networks have higher computational rates than conventional computers
 - (ii) Neural networks learn by example
 - (iii) Neural networks mimic the way the human brain works
 - (a) All of the mentioned are true
 - (b) (ii) and (iii) are true
 - (c) (i), (ii) and (iii) are true
 - (d) None of the mentioned

5. Feed forward networks are used for?
 - (a) Pattern mapping
 - (b) Pattern association
 - (c) Pattern classification
 - (d) All of the above mentioned
6. Information passed till it reaches the output in _____ type of ANN?
 - (a) Recurrent Neural Networks
 - (b) Feed-forward Neural Networks
 - (c) Convolutional Neural Networks
 - (d) Deconvolutional Neural Networks
7. Input applied in ANN passed on to layers hidden to produce outcome is referred to as _____.
 - (a) Signal Propagation
 - (b) Backward Propagation
 - (c) Channel Propagation
 - (d) Forward Propagation
8. Which parameter should be set while using Backpropagation?
 - (a) Number of Inputs
 - (b) Number of Outputs
 - (c) Number of Gradients
 - (d) Number of Intermediate Stages

2. Neural Networks are complex _____ with many parameters.
 - (a) Linear Functions
 - (b) Non Linear Functions
 - (c) Discrete Functions
 - (d) Exponential Functions
3. What is perceptron?
 - (a) A single layer feed-forward neural network with pre-processing
 - (b) An auto-associative neural network
 - (c) A double layer auto-associative neural network
 - (d) A neural network that contains feedback
4. In perceptron learning, what happens when input vector is correctly classified?
 - (a) Small adjustments in weight is done
 - (b) Large adjustments in weight is done
 - (c) No adjustments in weight is done
 - (d) Weight adjustments doesn't depend on classification of input vector

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9. Image pre-processing is carried-out by _____.
 - (a) ANN
 - (b) LAN
 - (c) MAN
 - (d) WAN
10. Which application out of these of robots can be made of single layer feedforward network?
 - (a) Wall climbing
 - (b) Rotating arm and legs
 - (c) Gesture control
 - (d) Wall following

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Give the comparison between the Artificial and Biological Neural Networks.

Or

 - (b) Discuss about Basic Building Blocks of Artificial Neural Networks.
12. (a) Explain Pits Neuron Model with neat diagram.

Or

 - (b) Discuss the Perceptron training rule in detail.

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[P.T.O.]

13. (a) Write a short note on Multi-layer feed forward networks.

Or

(b) Describe the design issues of Back Propagation Network.

14. (a) Write a short note on Kohonen's self-organizing map.

Or

(b) Explain the architecture of forward only CPN.

15. (a) Explain in detail about applications of Artificial Neural Networks.

Or

(b) Describe about the Bankruptcy Forecasting.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain how the neural networks plays an important role in Historical Development.

Or

(b) Explain the basic neuron models with necessary graphical representation.

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17. (a) How single layer perceptron is different from multi-layer perceptron? Explain the concept of multi-layer neuron model.

Or

(b) Explain the fundamental models of Artificial Neural Networks. Discuss about their Learning rules.

18. (a) Why does ANN use Back Propagation? Explain in detail.

Or

(b) What are the relation between BAM and Hopfield Nets?

19. (a) Explain about Kohonen self organizing features maps.

Or

(b) Briefly describe about the Counter Propagation Network and its types.

20. (a) Discuss Intrusion detection system for Healthcare based on Neural Networks.

Or

(b) How neural networks are applied in bioinformatics?

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