

(6 Pages)

Reg. No. :

Code No. : 20612 E Sub. Code : SECS 6 C

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2021.

Sixth Semester

Computer Science — Major Elective

NEURAL NETWORKS

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Engineers want to exploit the capabilities of neural network in
 - (a) Signal processing
 - (b) Memory, sensory system
 - (c) Interpret nucleotide sequences
 - (d) Marketing business

2. Perception was introduced by
 - (a) Hebb
 - (b) Widrow
 - (c) Rosenbalt
 - (d) Parker
3. The first formulation of synthetic neuron model was formulated by
 - (a) Mc Culloch-Pitts
 - (b) Rosenbalt
 - (c) Hebbb
 - (d) Widrow
4. Perceptron is used to learn
 - (a) Patterns
 - (b) Clustering
 - (c) Classification
 - (d) Content addressable memory
5. All the diagonal element of the weight matrix of a Hopfield net are
 - (a) 1
 - (b) 0
 - (c) -1
 - (d) n
6. Back propagation network uses _____
 - (a) Hebbian Rule
 - (b) Generalised Delta learning Rule
 - (c) Perceptron Rule
 - (d) None

7. Un supervised learning takes place in _____
- (a) SOM (b) BPN
(c) Perceptron (d) Hopfield Net
8. In Forward only CPN, when using interpolation mode _____
- (a) only one Kohonen unit is activated
(b) accuracy increases
(c) accuracy decreases
(d) accuracy is not affected
9. When using Neural networks in Arts, which of the following statement is true?
- (a) Output tasks are difficult than input tasks
(b) Both input and output tasks are easy
(c) Both input and output tasks are difficult
(d) Input tasks are difficult than output tasks
10. Which algorithm fails in medical application's rule generation?
- (a) SIG* (b) ID3
(c) Both (a) and (b) (d) Neither (a) nor (b)

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Briefly explain about Neural networks with block diagram.

Or

- (b) Write notes on Activation function.

12. (a) What are learning rules? Give some examples.

Or

- (b) Explain the architecture of single layer perception.

13. (a) What are the areas where BPN can be used?

Or

- (b) Discuss the relation between BAM and Hopfield net.

14. (a) Write notes on SOM.

Or

- (b) Explain the architecture of forward only CPN.

15. (a) Write any five applications of neural networks in Arts.

Or

- (b) Explain the various approaches for misuse detection.

PART C — ($5 \times 8 = 40$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) With a neat diagram, explain about neural networks.

Or

- (b) With examples, explain Activation functions.

17. (a) Generate the output of logic AND function by McCulloch-Pitts neuron model.

Or

- (b) Write short notes on :
- (i) Single layer perceptron
 - (ii) Multi layer perceptron

18. (a) Derive Generalised Delta Rule.

Or

- (b) Explain the training Algorithm of BPN.

19. (a) With the neat diagram, explain about SOM and its architecture.

Or

- (b) What are the parameters used in full CPN training?

20. (a) Explain the implementation of Kohonen Network on transputers.

Or

- (b) Write the applications of Neural Networks in business.
-