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Reg. No. : .....

Code No. : 30390 E Sub. Code : SECS 6 C

Sec. (CBCS) DEGREE EXAMINATION, APRIL 2022

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 :

\_\_\_\_\_ can also be defined as parameterized computational non linear algorithm for signal processing.

- (a) Neural networks (b) Neuron networks  
(c) Weights (d) Function

\_\_\_\_\_ learning rule is the oldest and most famous of all learning rules.

- (a) Hebbian (b) Perceptron  
(c) Delta (d) Competitive

3. \_\_\_\_\_ basis function network can be used for approximating functions and recognizing patterns.  
(a) Activation (b) Radial  
(c) SOM (d) Cluster
4. \_\_\_\_\_ self organizing maps are capable of reproducing important aspects of the structure of biological neural nets.  
(a) Kohen's (b) Vapnile  
(c) Broonheel (d) Parker
5. \_\_\_\_\_ perceptron networks is an important class of neural network.  
(a) Multi layer (b) Single layer  
(c) Weight (d) None of the above
6. \_\_\_\_\_ faster learning of a BPN can be obtained by using initialization.  
(a) Hidden (b) Sequential  
(c) Nguyen - Window (d) Error
7. The \_\_\_\_\_ distance between two vectors is the number of component in which the vectors different.  
(a) Hamming (b) Gaussian  
(c) Equi (d) Vector

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The \_\_\_\_\_ developed by Robert Hecht Nielson beyond the representational limits of single layer networks.

- (a) CCM (b) CPN  
(c) ART (d) Accretive model

\_\_\_\_\_ compression is a process of reducing the number of bits required to represent an image.

- (a) Video (b) Image  
(c) Audio (d) Delphi

\_\_\_\_\_ evaluate information captured from network communication, analyzing the stream of packets traveling across the network.

- (a) Host based Id's  
(b) Vulnerability  
(c) Network based Id's  
(d) Hardware based Id's

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

(a) Define artificial neural networks. Explain.

Or

(b) Explain the differences between the brain and the computers.

12. (a) Explain memory based learning.

Or

(b) Write an algorithm for Hebbnet.

13. (a) Explain the merits and demerits of back propagation network.

Or

(b) Explain the applications of back propagation.

14. (a) What is hamming net? Explain.

Or

(b) What are the two types of counter propagation net?

15. (a) Explain the basic concept of control systems.

Or

(b) State that selection of the wavelet filter algorithm.

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PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Compare biological and artificial neural networks.

Or

- (b) Explain the Artificial neural network terminologies.

17. (a) Brief note on multilayer perceptrons.

Or

- (b) Explain the perceptron algorithm for several output class.

18. (a) Discuss in detail about discrete Hopfield.

Or

- (b) Explain the continuous Hopfield net with example.

19. (a) Discuss the learning vector quantization.

Or

- (b) Explain the max net.

20. (a) Explain in detail about neural networks in communication.

Or

- (b) Describe the neural networks in robotics.