

# CBCS SCHEME

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18MT643

## Sixth Semester B.E. Degree Examination, June/July 2023 Artificial Neural Network

Time: 3 hrs.

Max. Marks: 100

**Note: Answer any FIVE full questions, choosing ONE full question from each module.**

### Module-1

- 1 a. Explain Biological neurons with neat labelled diagram. (10 Marks)  
b. What is threshold? What are the various objectives of TLN? (10 Marks)

OR

- 2 a. Explain about the feedback architecture with neat diagram. (10 Marks)  
b. Explain briefly about convex set and convex Hull. (10 Marks)

### Module-2

- 3 a. Derive Back propagation Algorithm. (10 Marks)  
b. Outline the stops involved in Gradient descent based learning procedure. (10 Marks)

OR

- 4 a. Explain  $\alpha$  - Least mean square Learning method. (10 Marks)  
b. Explain the applications of LMS for Noise cancellation. (10 Marks)

### Module-3

- 5 a. Explain structural risk management in SVM. (10 Marks)  
b. Write about the operational summary of SVM. (10 Marks)

OR

- 6 a. Show that multi variate Gaussian is Greens function. (10 Marks)  
b. Explain the concept of face recognition using RBF. (10 Marks)

### Module-4

- 7 a. Write a note on Associate learning. (10 Marks)  
b. Explain Hebb Association matrix. (10 Marks)

OR

- 8 a. Write a note on Hop field networks. (10 Marks)  
b. Explain about Boltzmann machine with its similarities and differences. (10 Marks)

### Module-5

- 9 a. Write a short note on Self organization. (10 Marks)  
b. What is maximal eigen vector fitting? (10 Marks)

OR

- 10 a. Explain about extracting principal components using Sawger's rule. (10 Marks)  
b. Explain the generalized learning laws. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.