

**M. TECH.**  
**(SEM-II) THEORY EXAMINATION 2018-19**  
**MACHINE LEARNING**

Time: 3 Hours

Total Marks: 70

Note: Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A****1. Attempt all questions in brief. 2 x 7 = 14**

- a. Define Machine Learning?
- b. Explain regression model.
- c. What is ANN?
- d. Explain Well defined learning problems.
- e. Define Decision tree.
- f. Explain Bayes classifier.
- g. Explain Q Learning.

**SECTION B****2. Attempt any three of the following: 7 x 3 = 21**

- a. Explain the role of genetic algorithm in knowledge based technique.
- b. Differentiate between Genetic algorithm & traditional algorithm with suitable example.
- c. Explain various ANN architecture in detail.
- d. Describe any algorithm to implement simulated annealing.
- e. Explain DBSCAN with its role in forming clusters.

**SECTION C****3. Attempt any one part of the following: 7 x 1 = 7**

- (a) Explain back propagation algorithm with suitable example.
- (b) Explain learning with any two learning techniques with its expression for weight-updating.

**4. Attempt any one part of the following: 7 x 1 = 7**

- (a) Write Short Note on followings (i) Sampling Theory (ii) Bayes Theorem
- (b) Explain any comparing learning technique with suitable example.

**5. Attempt any one part of the following: 7 x 1 = 7**

- (a) Explain the followings (i) Generalization (ii) Multilayer Network
- (b) Describe decision tree learning algorithm with example.

**6. Attempt any one part of the following: 7 x 1 = 7**

- (a) Define the process of designing a learning system. Explain various issues in Machine learning
- (b) Explain Candidate elimination algorithm in detail.

**7. Attempt any one part of the following: 7 x 1 = 7**

- (a) Explain FOIL in detail.
- (b) Explain the followings (i) Hypotheses (ii) Inductive Bias (iii) Perceptron.