Model Paper- 2
Hi-Tech Institute of Engineering and Technology
B.Tech (CSE /IT) Examination
(SEMESTER – 5th Sem) Odd Semester
MACHINE LEARNING TECHNIQUES – KCS055

Time: 3 Hours   *Total Marks: 100*

Faculty Name: Mr. Rishabh Kamal

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

SECTION-A

1.Attempt all parts   **(2×10=20)**
   a. What is learning?
   b. Explain Genetic Algorithm.
   c. What is MAP hypothesis?
   d. What is Cost Function?
   e. Define entropy.
   f. Explain Issues in decision tree.
   g. Why activation function is used in neural networks?
   h. Explain the delta rule.
   i. Explain genetic algorithm.
   j. Discuss learning tasks.

SECTION-B

2: Attempt any three parts   **(10x3=30)**
   a. Define the various steps in designing a learning system.
   b. Differentiate between Linear and logistic Regression.
   c. Write short notes on
            a) Instance based learning
            b) Locally weighted regression
   d. What are Convolutional Neural Networks?
   e. Discuss some of the applications of reinforcement learning.

SECTION-C

3: Attempt any one part of the following: **(10 x 1= 10)**
a. What are well defined learning problem. Explain handwritten   characters recognition problem in machine learning.
b. What is an Inductive bias? Is there any effect on classification due to bias?

4: Attempt any one part of the following: **(10 x 1= 10)**
a. Discuss the Naïve bayes Classifier.
b. Explain MAP hypothesis using bayes theorem.

5: Attempt any one part of the following: **(10 x 1= 10)**

a. Discuss the K nearest neighbor algorithm

b. What is a decision tree and discuss the use of decision tree for classification purpose.

6: Attempt any one part of the following: **(10 x 1= 10)**

a. Draw the perceptron network with the notation. Derive an equation of gradient descent rule to minimize the error.

b. What is Unsupervised learning and also discuss its types.

7: Attempt any one part of the following: **(10 x 1= 10)**

a. Discuss the learning tasks and Q Learning in the context of reinforcement learning.

b. Explain different operators in Genetic Algorithm**.**