



INSTITUTE OF AERONAUTICAL ENGINEERING (Autonomous)

B.Tech VI Semester End Examinations (Regular), November– 2020

Regulation: IARE–R16

MACHINE LEARNING

(CSE | IT)

Time: 2 Hours

Max Marks: 70

**Answer any Four Questions from Part A
Answer any Five Questions from Part B**

PART – A

1. When to consider decision trees in solving the real world problems? [5M]
2. Explain the concept of minimization of the network error by gradient descent method. [5M]
3. Interpret the definition of h_{MAP} using information theory concepts. [5M]
4. Discuss in detail about the method of combining classifiers using Bagging. [5M]
5. Explain the concept of distance and similarity measures. [5M]
6. Identify the use of slack variables for non-linearly separable problems. [5M]
7. Characterize the evolution over time of the population within a Genetic Algorithm. [5M]
8. How many times Cluster will try to restart the group/resource, before it mark a group/resource as failed. [5M]

PART – B

9. What is the procedure of building decision tree using ID3 algorithm with gain and entropy? [10M]
10. Give three computer applications for which machine learning approaches seem appropriate and three for which they seem inappropriate. [10M]
11. Write the Multi-layer perceptron Algorithm and briefly explain the steps including necessary mathematical equations. [10M]
12. Analyze the importance of Soft-Max activation function used in the output layer and mention the corresponding equation for calculating error in the output layer. [10M]
13. Discuss in detail about the Gaussian distribution with a neat sketch to illustrate the appearance of Gaussian distribution. [10M]
14. Investigate in detail on the usage of forward algorithm for estimating the probability that a particular sequence of output is produced by a HMM model. [10M]
15. How to find the scatter within a dataset using linear discriminant analysis? [10M]
16. Summarize the steps in implementing Genetic algorithm with necessary explanation. [10M]
17. Explain the process of identifying outliers in a set of data. [10M]
18. Compare and contrast of different clustering algorithms known to you based on the type of clustering, space and time complexity and how their algorithms are considered (notes). [10M]