Faculty of Science & Technology

Sixth Semester B.Tech. (Computer Science Engineering) (C.B.C.S.) Examination

MACHINE LEARNING

Elective–II

Time : Three Hours] [Maximum Marks : 70

INSTRUCTIONS TO CANDIDATES

(1) All questions carry marks as indicated.

(2) Solve Question 1 **OR** Question No. 2.

(3) Solve Question 3 **OR** Question No. 4.

(4) Solve Question 5 **OR** Question No. 6.

(5) Solve Question 7 **OR** Question No. 8.

(6) Solve Question 9 **OR** Question No. 10.

(7) Assume suitable data wherever necessary.

(8) Illustrate your answers wherever necessary with the help of neat sketches.

1. (a) What is human learning ? List and explain types of human learning. 5

(b) List & explain types of data. 4

(c) What do you mean by well posed learning problem ? Explain. 5

OR

2. (a) Write short notes on : 9

(1) Supervised learning

(2) Unsupervised learning

(3) Reinforcement learning.

(b) Enlist the issues in machine learning. 5

3. (a) What is the need of data preprocessing ? Explain different techniques of data preprocessing in detail. 7

(b) Discuss dimensionality reduction in brief. 7

OR

4. (a) Elaborate multiple linear regression. 5

(b) Explain feature subset selection in detail. 4

(c) Define simple linear regression using graph explaining slope & intercept 5

5. (a) Discuss support vector machine in detail. 5

(b) Describe Naïve Bayes decision tree algorithm with appropriate example. 9

OR

6. (a) Write short notes on : 9

(i) Validation error in KNN algorithm.

(ii) Choosing K value in the KNN algorithm.

(iii) Inductive bias in a decision tree.

(b) Discuss content based and collaborative techniques. 5

7. (a) Explain the concept of clustering in machine learning. Give real world example that can be solved using clustering analysis. 7

(b) Compare & contrast hierarchical clustering & K-medoids clustering. 7

OR

8. (a) Discuss Apriory algorithm for association rule learning with example. 9

(b) Describe anomaly detection algorithm. 5

9. (a) What is ensemble learning and how does it differ from other machine learning techniques ? 7

(b) How bagging helps in improving accuracy of a model ? 7

OR

10. (a) Discuss randomization in detail. 5

(b) Describe online fraud detection. 4

(c) Enlist applications of machine learning. 5