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## TCS-509

### B. TECH. (CSE) (FIFTH SEMESTER) MID SEMESTER EXAMINATION, 2022

#### MACHINE LEARNING

Time : 1½ Hours

Maximum Marks : 50

**Note :** (i) Answer all the questions by choosing any *one* of the sub-questions.

(ii) Each question carries 10 marks.

1. (a) What do you mean by the term Machine Learning ? Explain the impact of various machine learning techniques in today's world. 10 Marks (CO1)

OR

- (b) How data characteristics related to Machine Learning ? Explain with the help of an example. 10 Marks (CO1)

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2. (a) Find the mean, median, mode and range for the following list of values :

10 Marks (CO1, CO2)

13, 18, 13, 14, 13, 16, 14, 21, 13

OR

- (b) What are the different approaches and algorithms that are used in classification ? Explain each of them in detail.

10 Marks (CO1, CO2)

3. (a) Explain the term Outlier with respect to datasets. Explain with the help of box plot.

10 Marks (CO1, CO2)

OR

- (b) What do you understand by Supervised, Unsupervised and Reinforcement Machine Learning ? Explain the real time scenarios with examples where all these types of Machine Learning can be implemented.

10 Marks (CO1, CO2)

(3)

4. (a) What are the different preprocessing techniques required to prepare a dataset ? Explain all the techniques with suitable example. 10 Marks (CO1, CO2)

OR

- (b) What do you understand by dataset, training set and testing dataset ? Explain the term data preprocessing and its benefits. 10 Marks (CO1, CO2)
5. (a) Explain the term Decision Trees with respect to Machine Learning. What are the strengths and weaknesses of Decision Tree algorithm ? 10 Marks (CO1, CO2)

OR

- (b) Explain basic difference between KNN, SVM and Decision Tree, with the help of suitable example and diagram.

10 Marks (CO1, CO2)