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**Presidency University**

**Bengaluru**

**School Of Computer Science and Engineering & Information Science**

**Summer term End-Term Examinations, August 2024**

**Date**: 05-08-2024

**Time**:1:00PM - 4:00PM

**Max Marks**: 100

**Weightage**: 50%

**Odd Semester**: 2023 - 24

**Course Code**: CSE319

**Course Name**: Machine Learning

**Department: Computer Science and engineering**

**Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Do not write any matter on the question paper other than roll number.*

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| **Q.No** | **Questions** | **Marks** | **CO** | **RBT** |
| 1 | 1. Explain machine learning | 4 | CO1 | L1 |
| 1. Illustrate the supervised learning with an example | 6 | CO1 | L2 |
| 1. WAP implement a technique for addressing missing values in the dataset | 10 | CO1 | L3 |
| OR | | | | |
| 2 | 1. List any two machine learning applications | 4 | CO1 | L1 |
| 1. Illustrate the supervised learning with an example | 6 | CO1 | L2 |
| 1. WAP to handle missing values in the data set, prepare the missing value data set for supervised learning and process the features using the mean approach. | 10 | CO1 | L3 |

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| 3 | 1. List the difference between classification and regression | 4 | CO2 | L1 |
| 1. Explain types of knowledge representation in machine learning? | 6 | CO2 | L2 |
| 1. Demonstrate the Logistic regression algorithm using UCI dataset. Estimate the class probabilities for a given test data set | 10 | CO2 | L3 |

OR

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| 4 | 1. What are the types of data per-processing methods in machine learning techniques? | 4 | CO2 | L1 |
| 1. List the importance of data pre-processing in supervised learning? | 6 | CO2 | L2 |
| 1. Compare and contrast logistic regression and linear regression in machine learning? | 10 | CO2 | L3 |

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| 5 | 1. What are approaches for ensemble learning? | 4 | CO3 | L1 |
| 1. Explain logistic algorithm. | 6 | CO3 | L2 |
| 1. WAP to Implement Naïve Bayes Classifier for the given dataset. Estimate accuracy of the model and display the confusion matrix as well as the classification report | 10 | CO3 | L3 |

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| 6 | 1. What are the types of data in machine learning? | 4 | CO3 | L1 |
| 1. Explain bagging and boosting. | 6 | CO3 | L2 |
| 1. How does ensemble learning work? List the various techniques for ensemble learning. | 10 | CO3 | L3 |

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| 7 | 1. Explain unsupervised machine learning. | 4 | CO4 | L1 |
| 1. Define KNN algorithm | 6 | CO4 | L2 |
| 1. The table represents a dataset with two features and a class label.   Predict the class label (Color) for a new data point with features Brightness = 20 and Saturation = 35 | 10 | CO4 | L3 |

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| 8 | 1. List out the unsupervised learning applications? | 4 | CO4 | L1 |
| 1. Explain clustering and its type | 6 | CO4 | L2 |
| 1. Developing a machine learning model to predict the presence of heart disease in patients. The dataset provided includes several features related to patient health and a label indicating whether the patient has heart disease. You will use the k-nearest neighbors (k-NN) algorithm to classify patients. | 10 | CO4 | L3 |

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| 9 | 1. Explain perceptron. | 4 | CO5 | L1 |
| 1. Define elbow method with a diagram. | 6 | CO5 | L2 |
| 1. Use K means Clustering algorithm to divide the following data into two clusters. | 10 | CO5 | L3 |

OR

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| 10 | 1. Define Linear Threshold Unit with diagram. | 4 | CO5 | L1 |
| 1. Cite the disadvantage of Kmeans algorithm. And specify the techniques are used to overcome the limitation of Kmeans. | 6 | CO5 | L2 |
| 1. Explain different types of activation function and plot it. | 10 | CO5 | L3 |