B. M. S. College of Engineering, Bengaluru - 560019

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E.   Semester: VII
Branch: MEDICAL ELECTRONICS   Duration: 3 hrs.
Course Code: 19ML7PCMCL   Max Marks: 100
Course: Machine Learning   Date: 27.09.2023

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

1. a) Explain the data science lifecycle from start to end with the help of diagram **10**

   b) What is correlation? Explain its types and importance. **10**

UNIT - II

2. a) What is the need for Exploratory data analysis and what are the major steps followed in EDA? **10**

   b) What is linear regression? Explain its implementation with pseudocode **10**

UNIT - III

3. a) Implement a Decision Tree Regression model with a pseudocode **10**

   b) What are the functions of Kernels? With the help of python code explain how can they be used in Support vector regressors. **10**

UNIT - IV

4. a) Why we cannot use accuracy as the performance metric every time. while evaluating a machine learning model? Justify. **10**

   b) Explain the following feature selection methods used in machine learning
   - Correlation Coefficient
   - Variance threshold

   10

OR

5. a) What is random forest and implement random forest classifier using python. **10**

   b) What is the Boruta feature selection method and how does it work? **10**

UNIT - V

6. a) Why is SHAP a more popular and reliable technique? **05**

   b) What are IaaS, PaaS and SaaS in explainable AI? **05**

   c) What is Model Interpretation? Explain its types with an example **10**

OR

7. a) Explainers are the models used to calculate shapley values. Explain different type of Explainers used in interpretable AI. **10**

   b) Why and how "What if Tool" is used for? **10**

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