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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (CSE) (Sem.-6)

**MACHINE LEARNING**

Subject Code : BTCS-618-18

M.Code : 79257

Date of Examination : 22-12-2024

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**1. Write briefly :**

- a) Define machine learning and explain its importance.
- b) Write the key elements of Reinforcement learning.
- c) Why do we need data integration in a machine learning process?
- d) What is the purpose of splitting data into training and test sets?
- e) What is multiple linear regression, and how does it differ from simple linear regression?
- f) What is polynomial regression?
- g) Explain the logistic function and its role in logistic regression.
- h) Explain the concept of a hyperplane in the context of SVMs.
- i) Name common activation functions used in Artificial Neural Networks.
- j) What is the purpose of the selection operation in a genetic algorithm?

## SECTION-B

2. Explain the concept of Supervised learning along with its advantages and disadvantages.
3. Write a detailed note on Data Cleaning.
4. Write a detailed note on Simple linear regression.
5. Write a detailed note on need and applications of clustering.
6. Explain in detail about Apriori algorithm.

## SECTION-C

7. Write a detailed note on various issues in Machine Learning.
8. Write a detailed note on following feature scaling techniques along with their advantages and disadvantages.
  - a) Normalization
  - b) Standardization
9. **Write a detailed note on following algorithms:**
  - a) Random Forest classification
  - b) Logistic Regression

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**