

560

Roll No. 1032210755



Dr. Vishwanath Karad  
**MIT WORLD PEACE UNIVERSITY** | PUNE  
TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS



School of Computer Science and Engineering  
Department of Computer Engineering and Technology  
T.Y.B.Tech. (CSE) (Academic Year 2023-24)

Mid Term Exam - Semester VI

Course Name:- Machine Learning

Course Code:- CET3006B

Maximum Marks: 15

Time: 45 Minutes

Date: 01/04/24

**Instructions:-**

1. Solve Q1 or Q2 and Q3 or Q4.
2. Figure to the right indicates full marks.
3. Use of cell phone is prohibited in the examination hall.
4. Neat diagrams must be drawn wherever necessary.
5. Assume suitable data, if necessary and clearly state.
6. Use of scientific calculator is allowed

Q.1 a. Explain the features of machine learning that are compatible to the prediction from a dataset. [4 Marks]

b. What is data encoding? Explain any two data encoding techniques. [4 Marks]

OR

Q.2 a. State the significance of dimensionality reduction. What is T-SNE? [4 Marks]

b. What is exploratory data analysis (EDA)? Explain the graphical techniques: box plot, histogram & scatter plot used in EDA. [4 Marks]

Q.3 a. In a Covid test of 1000 patients, there were 45 positive tests, of which 30 patients had covid and 15 were falsely tested positive. Of the 955 negative tests there were 5 that were incorrect, these patients had covid but were tested negatively. Draw the confusion matrix and calculate the accuracy, precision, recall, sensitivity and F1 score from the matrix. [4 Marks]

		PREDICTIONS	
ACTUAL		TRUE POSITIVE 30	FALSE POSITIVE 15
		FALSE NEGATIVE 5	TRUE NEGATIVE 950

Roll No. 103221755



Dr. Vishwanath Karad

**MIT WORLD PEACE  
UNIVERSITY | PUNE**

TECHNOLOGY RESEARCH SOCIAL INNOVATION & PARTNERSHIPS

- b Explain in brief:
- 1) Gini Index
  - 2) Gain Ratio
  - 3) Information Gain
  - 4) Holdout method
  - 5) Bootstrap
  - 6) ROC Curves

[3 Marks]

OR

- Q.4 a Write the different steps in random forest algorithm and explain it with the help of a diagram. [4 Marks]
- b Explain and differentiate between Lazy learners and Eager learner. [3 Marks]
-