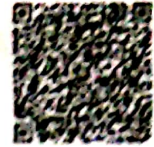# STATE BOARD OF TECHNICAL EDUCATION AND TRAINING
TELANGANA
DIPLOMA EXAMINATION (C-21)
C-21-APR-2025
SEMESTER V , SEMESTER END EXAM

AI-503
Machine Learning

PCODE
15004

Exam Date: 01-05-2025

Session: FN

Duration: 2 Hours [09:30 AM To 11:30 AM] 99859-AI-035

[Total Marks: 40]

PART-A

Instructions: 1. Answer the following questions.   8 X 1 = 8
                    2. Each question carries ONE mark.

1.   What is likelihood function?

2.   What is Resampling method?

3.   Define Randomness.

4.   Define data.

5.   List out the approaches in hierarchical clustering.

6.   Define unsupervised learning.

7.   List types of time series.

8.   Define stop words.

PART-B

Instructions: 1. Answer the following questions.   4 X 3 = 12
                    2. Each question carries THREE marks.

9(a).   Explain about handling missing values?

----- OR ----

9(b).   Write about content based recommender system.

10(a).

        List any three Cost functions.

----- OR ----

10(b).   Briefly explain the process of removing stopwords.

11(a).   Briefly explain Matrix Factorization.

----- OR ----

11(b).   What is collaborating filtering?

12(a).   Write about Term Frequency.

—— OR ——

12(b).   Explain about Arima.

PART-C

Instructions: 1. Answer the following questions. $4 \times 5 = 20$
2. Each question carries **FIVE** marks.

13(a).   Explain the formula of multi variant regression?

—— OR ——

13(b).   Write about K-Means clustering algorithm steps.

14(a).   Explain Architecture of artificial neural network

—— OR ——

14(b).   Explain the working of Holt winter algorithm.

15(a).   Write about singular value decomposition.

—— OR ——

15(b).   Explain Principal Component Analysis.

16(a).   Explain the types of tokenization.

—— OR ——

16(b).   Explain Text classification using Random forest.