



RAN-2511000903011008 - H

B.C.A. (A.I. and Data Analytics) (Sem. - III) Examination December - 2025

303-05 : Fundamentals of Machine Learning (PR)

Time: 2 Hours]

[Total Marks: 25

સૂચના : / Instructions

(1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.

Fill up strictly the above details on your answer book.

Seat No.:

--	--	--	--	--	--

Student's Signature

Q. 1. Solve following problem:

[10]

Create a CSV file named employees.csv having the following attributes:

- Emp_ID
- Name
- Department
- Salary
- Experience

Store at least 20 records in the CSV file and perform Exploratory Data Analysis (EDA) using Python.

1. Load the dataset into a Pandas dataframe.
2. Display the first 5 rows of the dataframe.
3. Perform Univariate Analysis on the Salary column (mean, median, mode, variance, standard deviation, histogram).
4. Perform Bivariate Analysis between Experience and Salary using a scatter plot.
5. Perform Multivariate Analysis by showing correlation among all numerical attributes.
6. Identify and handle missing data in the dataset (if any).

Q. 2.

A real estate company wants to predict house prices based on the size of the house (in square feet),

[10]

data = {

"House_Size": [850, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, 2100, 2200],

"Price": [75, 80, 85, 88, 90, 95, 100, 110, 115, 120, 125, 130, 135, 140, 150]

}

- 1) Create a DataFrame and display the dataset.
- 2) Take House_Size as independent variable (X) and Price as dependent variable (Y).
- 3) Split data into training and test sets.
- 4) Build a Linear Regression model.
- 5) Predict house prices for the test set.
- 6) Evaluate performance using R^2 Score and Mean Squared Error (MSE).

Q. 3.

Viva-voce

[05]