



RAN-2511000903011008-A

B.C.A. (AI 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.:

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Student's Signature

Q. 1 Solve following problem: [10]

Create a CSV file named cars.csv with attributes:
(Car_ID, Brand, Model, Price, Mileage, Year).
Store 20 records. Perform EDA:

1. Load dataset.
2. Show first 7 rows.
3. Univariate Analysis' on Mileage.
4. Bivariate Analysis between Year and Price.
5. Multivariate correlation heatmap for numerical attributes.

Q. 2 A Company wants to study how electricity consumption (in kWh) varies [10]

with temperature (°C).

Dataset Dictionary:

data = {

“Temperature”: [15,18, 20, 22, 24, 26, 28, 30, 32, 34, 35, 36, 37, 38, 40],

“Consumption”: [300, 320, 340, 360, 390, 420, 450,
480, 500, 530, 560, 580, 600, 620, 650]

}

Solve Following:

- 1) Use **Temperature** as independent variable (X) and **Consumption** as dependent variable (Y).
- 2) Train Linear Regression model.
- 3) Predict electricity consumption from test data.
- 4) Visualize regression line with scatter plot.
- 5) Evaluate model performance.

Q. 3 Viva-voce [05]