

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
IV-B.TECH-I-Semester End Examinations (Regular) - December- 2025
DATA ANALYTICS
(IT)

[Time: 3 Hours]

[Max. Marks: 60]

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 10 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A

(10 Marks)

- | | | |
|-------|---|------|
| 1. a) | Mention any two issues affecting in data quality. | [1M] |
| b) | What is the role of sensors in data collection? | [1M] |
| c) | State any one application of analytics in business. | [1M] |
| d) | What are the main types of data? | [1M] |
| e) | What is variable rationalization? | [1M] |
| f) | What is least square estimation? | [1M] |
| g) | Define ETL approach. | [1M] |
| h) | What is ARIMA model? | [1M] |
| i) | Define complex data relations. | [1M] |
| j) | Define pixel- oriented visualization. | [1M] |

PART-B

(50 Marks)

2. Discuss the components of data architecture in detail and explain how data is managed for analytics. [10M]

OR

- | | | |
|------|--|------|
| 3.a) | Discuss various data quality issues in missing values. | [5M] |
| b) | What is data preprocessing? Describe its stages. | [5M] |
| 4.a) | What are the different types of data and variables? | [5M] |
| b) | Explain in detail about data modelling techniques.. | [5M] |

OR

5. Explain the process of data analytics and discuss its applications in business decision-making. [10M]

6. Apply a regression model to forecast future financial performance using a real-time dataset of company revenue and marketing expenditure. Analyze the regression results and interpret how marketing investment impacts revenue growth. [10M]

Marketing Spend Year (₹ Lakhs)	Revenue (₹ Crores)
2020 30	5.5
2021 35	6.1
2022 38	6.8
2023 40	7.2
2024 45	8.0

OR

7. Explain about regression types and detailed note on model construction in logistic regression. [10M]

8. Explain time series analysis methods and measures of forecast accuracy. [10M]

OR

9. Write short notes on regression vs segmentation and STL approach in forecasting. [10M]

10. Analyze hierarchical visualization techniques and its usage in Healthcare [10M]

OR

11. Discuss in detail about geometric and icon-based visualization methods. [10M]
