

Code No.: R22IT701PC

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**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]

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