

Time: 3 hours

Max. Marks: 75

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

Part A is compulsory which carries 25 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****(25 Marks)**

- 1.a) List the Data types in R. [2]
- b) Explain R loops. [3]
- c) Define Expected value? [2]
- d) What are the roles of a Team member? [3]
- e) Define NO SQL? [2]
- f) Write the differences of NO SQL and SQL. [3]
- g) Explain Regression residuals. [2]
- h) Define Multiple Linear Regression? [3]
- i) What is meant by Manufacturing? [2]
- j) Explain Smart Utilities. [3]

**PART - B****(50 Marks)**

- 2.a) What are Outliers? Explain with an example? [5]
  - b) Explain about Work Management and Prioritization. [5]
- OR**
3. Explain the following with syntax and example. [15]
    - a) Numeric
    - b) Character
    - c) Date
    - d) Array
    - e) Matrix.
  - 4.a) Explain about Random and Bivariate Random variables. [5+5]
  - b) What is Professionalism? How to exhibit Professionalism? [5+5]
- OR**
5. Explain about Central Limit Theorem in detail with example in R. [10]

- 6.a) What are the benefits of NO SQL? [5+5]  
b) List the NO SQL database examples. [5+5]

**OR**

- 7.a) Write the NO SQL database classification based on data model with examples. [5+5]  
b) List the steps for connecting R to NO SQL database. [5+5]

8. Explain the following: [5+5]  
a) Correlation  
b) Auto correlation.

**OR**

9. What is Heteroscedasticity? Explain in detail. [10]

10. Explain about Requirements Gathering related to a business. [10]

**OR**

11. Explain the concept of Understanding systems and Engineering Design. [10]

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