

INDIAN STATISTICAL INSTITUTE

Mid-Semester examination: 2023-24

Course Name: M.Tech (QR & OR) 2nd YEAR

Subject: Business Analytics

Date of Exam: 21.09.23

Total Marks: 50

Duration: 1 hr. 30 min.

Assignment (02): 50 marks

Answer all the questions.

1. Cite two examples of Business Domains and Business Verticals, and connect relationship between those.

[2+3=5]

2. Give two business examples of BIG data from the viewpoint of structured data and unstructured data. What are the major challenges in big data scenario in industry?

[4+2=6]

3. Develop a data quality metric considering various components (at least three) of data quality and explain its significance.

[7]

4. In Data Cleaning phase, explain EM algorithm in context of at least two types of missing data.

[10]

5. Mention the main objective and benefits of dimensionality reduction. Explain the utilities of Low Variance Filter, Factor Analysis and ISOMAP techniques in context of feature selection and feature extraction of high-dimensional data.

[3+6=9]

6. State the business objectives of interest in case of visualizing high dimensional data with the help of three individual techniques (Bubble chart, Scatter Plot Matrix & Doughnut chart).

[3]

- ✓ 7. Write down at least three differences between Supervised learning and Unsupervised learning.

[3]

- ✓ 8. Explain the concept of impurity and its measures in Decision Tree algorithm. How do you tackle the overfitting issue in tree algorithm?

[5+2=7]