

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (OLD) EXAMINATION – WINTER 2023****Subject Code:2170715****Date:08-12-2023****Subject Name: Data Mining and Business Intelligence****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- | | | |
|------------|--|-----------|
| Q.1 | (a) What is metadata repository? Explain. | 03 |
| | (b) Explain Data Cleaning process for missing values & Noisy data. | 04 |
| | (c) Explain three-tier data warehouse architecture. | 07 |
| Q.2 | (a) Give the classification of data mining system. | 03 |
| | (b) Explain Mean, Median, Mode, and Variance in brief | 04 |
| | (c) Describe the Classification by Decision Tree Induction Algorithm. | 07 |
| | OR | |
| | (c) Explain Naïve Bayesian classifier with example. | 07 |
| Q.3 | (a) List and describe major issues in data mining. | 03 |
| | (b) Compare OLTP & OLAP systems. | 04 |
| | (c) Explain Star, Snowflake, and Fact Constellation Schema for Multidimensional Database. | 07 |
| | OR | |
| Q.3 | (a) Give the difference between data warehouse and data mart. | 03 |
| | (b) What is Cuboid? Explain various OLAP Operations on Data Cube in brief. | 04 |
| | (c) Describe the types of OLAP models. | 07 |
| Q.4 | (a) Explain text mining with example. | 03 |
| | (b) Explain different types of Web Mining with example. | 04 |
| | (c) Explain the KDD process in details | 07 |
| | OR | |
| Q.4 | (a) What is map reduce? Explain in brief. | 03 |
| | (b) What are the challenges for effective resource and knowledge discovery in mining the World Wide Web? | 04 |
| | (c) Explain Architecture of a typical data mining system. | 07 |
| Q.5 | (a) Define: Information Gain, Gain Ratio & Gini Index. | 03 |
| | (b) Explain Rule-based Classification in brief. | 04 |
| | (c) Explain Apriori algorithm for discovering frequent item sets for mining Boolean Association Rules. | 07 |
| | OR | |
| Q.5 | (a) Give the difference between supervised and unsupervised learning. | 03 |
| | (b) Differentiate classification and clustering. | 04 |
| | (c) What is Market Basket Analysis? Explain Association Rules with Confidence & Support. | 07 |
