

(2^{1/2} Hours.)

[Total Marks: 75]

N. B.: (1) All questions are compulsory.

(2) Numbers to the right indicate marks.

(3) Make suitable assumptions wherever necessary and state the assumptions made.

(4) Answers to the same question must be written together.

(5) Mixing of Sub-Questions is not allowed.

(6) Draw neat labelled diagrams wherever necessary.

1. Attempt any three of the following:

15

- What is the Data, Information, Knowledge and Wisdom (DIKW) Pyramid?
- State the benefits of Business Intelligence.
- Explain in detail Business Intelligence Operational and Decision Support System.
- What is KDD? Explain the process of KDD in detail.
- What are the data reduction strategies?
- Explain binning for data discretization.

2. Attempt any three of the following:

15

- Explain ETL process in data warehouse.
- What is Normalization? Explain its types.
- Explain the importance of metadata.
- How does a data warehouse differ from a database?
- Differentiate among a data mart, an ODS, and an EDW.
- State the various properties of data warehouse architectures.

3. Attempt any three of the following:

15

- What are the Benefits of Data Warehouse?
- State the advantages of Dimensional Modelling.
- Explain Star Schema in detail.
- Difference between OLTP and OLAP.
- What are Data cube operations? Explain.
- State the steps to create a dimension model?

4. Attempt any three of the following:

15

- Explain Market Basket Analysis with an example.
- Explain the techniques to improve efficiency of Apriori Mining.
- Describe the issues in data mining.
- Explain multidimensional and multilevel association rules with example.
- Elaborate Hash tree in details.
- State the applications of data mining.

5. Attempt any three of the following:

15

- Explain Virtual data warehouse.
- Sketch and explain the Three-Tier architecture of data warehouse.
- Write a short note on Snowflake Schema.
- Explain the architecture of data mining.
- Describe the different types of Smoothing with examples.
- What is Noisy data?