

Time: 2½ Hours

Total Marks: 75

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

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

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

(4) Numbers to the right indicate marks.

(5) Draw neat labeled diagrams wherever necessary.

(6) Use of Non-programmable calculators is allowed.

1. Attempt any three of the following:

15

- Explain the three main components of Business Intelligence?
- What is the role of mathematical models in Business Intelligence?
- How does data become information and then knowledge?
- Draw and explain Business Intelligence architecture.
- What are the main components of a DSS?
- What are the steps in the decision-making process?

2. Attempt any three of the following:

15

- What are the key steps in developing a mathematical model?
- What is the main purpose of data mining?
- Which is common method used for data analysis in data mining.
- Why is data transformation important?
- What is data reduction?
- How does data preparation improve the accuracy of data analysis?

3. Attempt any three of the following:

15

- What is the purpose of Bayesian methods in classification?
- What is the role of support vector machines (SVM) in classification?
- Describe in brief logistic regression.
- How is clustering different from classification?
- Why is evaluating clustering models important?
- Describe one real-life application of clustering.

4. Attempt any three of the following:

15

- a How is information classified in MIS?
- b What are the characteristics of high-quality information?
- c Explain the relational marketing.
- d What is a revenue management system?
- e What is the purpose of the CCR model in DEA?
- f Why is efficiency analysis important in business operations?

5. Attempt any three of the following:

15

- a. Compare different types of knowledge management metrics used in businesses.
- b. What factors influence the development of an organization's culture?
- c. How can a company use the maturity model to improve its operations?
- d. How is AI different from Natural Intelligence?
- e. Explain structure of the expert system.
- f. How effective is machine learning in predictive analysis?
