

[Time: 2.30 Hrs]

[Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. All question are compulsory.
 2. Figures to the right indicate full marks.

Q.1 Attempt **any three** of the following: 15

- a. Explain business intelligence architecture with the help of a diagram.
- b. Write a short note on Data, Information and knowledge with respect to BI.
- c. Explain mathematical models and its advantages.
- d. What is decision support system (DSS)? What are the factors that affect the degree of success of a DSS?
- e. What is a System? Explain Open and Closed Systems with the help of a suitable diagram.
- f. Explain decision and problem solving. List and explain various factors affecting decision-making process.

Q.2 Attempt **any three** of the following: 15

- a. Define the mathematical model. Explain its type.
- b. Explain the divisions of mathematical models according to their characteristics, Probabilistic nature, temporal dimension.
- c. Difference between supervised and unsupervised learning.
- d. Explain the Data Mining process in detail.
- e. Explain the importance of Data validation.
- f. Write difference between structured and unstructured data.

Q.3 Attempt **any three** of the following: 15

- a. Explain top-down induction of decision tree. Examine the components of the top-down Induction of decision trees procedure.
- b. What are the criteria used to evaluate classification methods?
- c. Write a short note on Naive Bayesian classifiers.
- d. What is Clustering? Explain its methods.
- e. Explain K-means algorithms with steps and example.
- f. Write a short note on confusion matrix.

Q.4 Attempt **any three** of the following: 15

- a. What does relational Marketing? Explain in detail.
- b. Explain the concept of Market basket analysis.
- c. Explain Revenue management systems in detail.
- d. Write a short note on CCR model.
- e. What is mean by Cross-efficiency analysis?
- f. Write short note on Data envelopment analysis.

Q.5 Attempt **any three** of the following:

15

- a. Define knowledge management. What are data, information and knowledge?
 - b. Explain in detail KMS cycle.
 - c. What is Organizational Learning?
 - d. Explain characteristics of expert systems.
 - e. Explain forward chaining and backward chaining.
 - f. Write different Applications of AI.
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