

22593

23124

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
  - (2) Illustrate your answers with neat sketches wherever necessary.
  - (3) Figures to the right indicate full marks.
  - (4) Assume suitable data, if necessary.
  - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

	<b>Marks</b>
<b>1. Attempt any FIVE of the following :</b>	<b>10</b>
(a) Give applications of AI.	2
(b) Define Heuristic Search techniques.	2
(c) List the different types of AI agent.	2
(d) Define Multiclass Classification.	2
(e) List different techniques of data cleaning.	2
(f) Define First – order logic.	2
(g) State any four important supervised machine learning algorithms.	2
<b>2. Attempt any THREE of the following :</b>	<b>12</b>
(a) Differentiate between Natural (human) Intelligence and Artificial Intelligence.	4
(b) Discuss the properties of A* algorithm.	4
(c) Describe the history and evolution of ML.	4
(d) Explain the need of data preprocessing.	4



- 3. Attempt any THREE of the following : 12**
- (a) Explain Baye's theorem. 4
  - (b) Differentiate between Data Analytics and Data Science. 4
  - (c) Differentiate between overfitting and underfitting. 4
  - (d) Explain any one unsupervised algorithm. 4
- 4. Attempt any THREE of the following : 12**
- (a) Describe the structure of agents. 4
  - (b) Explain different Heuristic Search techniques. 4
  - (c) Illustrate different types of reasoning in AI. 4
  - (d) Draw and explain the machine learning life cycle. 4
  - (e) State and explain different types of learning. 4
- 5. Attempt any TWO of the following : 12**
- (a) Explain Hill Climbing and Best search algorithm with example. 6
  - (b) Describe the architecture and techniques of knowledge based agent in AI. 6
  - (c) Implement multiple linear regression algorithm. 6
- 6. Attempt any TWO of the following : 12**
- (a) Explain the following Metrics for Regression : 6
    - i. Mean Squared Error (MSE)
    - ii. Root Mean Squared Error (RMSE)
    - iii. Mean Absolute Error (MAE)
  - (b) Explain different forms of data. 6
  - (c) Elaborate Beyond Classical Search. 6
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