22593

12425

3 Hours / 70 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Assume suitable data, if necessary.

Marks

1. Attempt any FIVE of the following : **10**

(a) Write the applications of AI.

(b) List different types of AI agent.

(c) Define heuristic search technique.

(d) Define the first order logic.

(e) Define training and testing data.

(f) State any two important supervised machine learning algorithms.

(g) What is the need of confusion matrix ?

2. Attempt any THREE of the following : **12**

(a) Explain the need of data preprocessing.

(b) Explain binary and multiclass classification in logistic regression.

(c) Explain the different techniques of knowledge based agent in AI.

(d) Write algorithm of depth first search.

3. Attempt any THREE of the following : **12**

(a) Explain positive and negative class, cross validation.

(b) Explain turning test in AI with an example.

(c) Describe different metrics for classification.

(d) Explain the working of Hill Climbing algorithm in AI.

4. Attempt any THREE of the following : **12**

(a) Describe structure of Agents.

(b) Describe the properties of A* algorithm.

(c) What are the techniques of knowledge representation ?

(d) Implement simple linear regression algorithm in Python.

5. Attempt any TWO of the following : **12**

(a) Write a short note on : Supervised learning algorithm, unsupervised learning, semi-supervised learning algorithms.

(b) Describe machine learning life cycle.

(c) Elaborate beyond classical search.

6. Attempt any TWO of the following : **12**

(a) Illustrate different type of reasoning in AI.

(b) Explain any one unsupervised learning algorithms.

(c) Explain following metrics for regression :

(i) Mean Squared Error (MSE)

(ii) Root Mean Squared Error (RMSE)

(iii) Mean Absolute Error (MAE)
