315330

12526

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) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

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

a) List any four application of AI.

b) State the need of search algorithm in Artificial Intelligence.

c) Compare forward chaining and backward chaining in AI. (Minimum two points each)

d) Draw machine learning life cycle.

e) Define unsupervised learning with example.

f) List metrics for classification.

g) Define linear regression with example.

P.T.O.

Marks

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

a) Describe properties of A✳ algorithm.

b) Illustrate Bayes' Theorem with example.

c) Differentiate between Training dataset and Testing dataset. (Minimum four points each.)

d) Explain positive and negative class cross-validation.

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

a) Explain local search algorithm with example.

b) Differentiate between Data Analytics and Data Science. (Minimum four points each)

c) Describe logistic regression learning algorithm.

d) Explain Binary and Multiclass classification.

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

a) Explain Greedy Best-First technique with example.

b) Describe the architecture of knowledge based agent in AI.

c) Elaborate data cleaning with example.

d) Explain Hierarchical clustering unsupervised learning algorithm.

e) Differentiate between overfitting and underfitting. (Minimum four points each.)

Marks

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

a) Explain Intelligent agent in AI w.r.t. structure of agent and turing test in AI.

b) Illustrate probabilistic reasoning in AI with example.

c) Explain the following metrics for Regression :

i) Mean Squared Error (MSE)

ii) Root Mean Squared Error (RMSE)

iii) Mean Absolute Error (MAE)

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

a) Explain different forms of data.

b) Differentiate between supervised and unsupervised learning. (Minimum six points of each.)

c) Implement multiple linear regression with example.
