



Date: 17-06-2022

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

PART – A

Q. No Answer ALL Questions

(10 x 2 = 20 Marks)

- 1 Define Machine Learning - Tom Mitchell.
- 2 Define supervised learning and list out its types.
- 3 Define Multiple Linear Regression.
- 4 State the term bagging.
- 5 What is Logistic Regression?
- 6 What is the primary difference between classification and regression decision trees?
- 7 What is density-based clustering?
- 8 State the term collaborative Filtering
- 9 What is Eclat algorithm?
- 10 Define UCB algorithm.

PART – B

Answer ALL Questions

(5 x 8 = 40 Marks)

- 11 (a) Explain the steps involved in designing a learning system.
or
(b) Define & Differentiate between Supervised and Unsupervised Learning.
- 12 (a) Explain the concept of Lasso Regression and list out its advantages.
or
(b) State and explain the basic ensemble techniques with an example code.
- 13 (a) Explain the steps involved in Random Forest algorithm with neat illustration.
or
(b) Describe the concept of Support Vector Machine Classification in detail.
- 14 (a) State and explain the steps involved in K-means Clustering.
or
(b) Explain the various categories of Collaborative Filtering in detail.
- 15 (a) Explain the concept of Reinforcement Learning in detail.
or
(b) Describe the concept of Thompson Sampling in detail.

PART – C

Answer any TWO Questions

(2 x 20 = 40 Marks)

16 Explain the following:

- (a) Mathematical Foundations of Machine Learning.
- (b) Polynomial Regression – Advantages & Disadvantages, Features.

17 Write a short note on the following:

- (a) Metrics involved in evaluation of classification models.
- (b) Various Feature Selection Methods in dimensionality reduction.

18 (a) Explain the concept of Apriori algorithm in detail.

- (b) Find all frequent item sets with minimum support = 2 and confidence = 70% and generate strong association rules for the given transaction data using Apriori algorithm.

TID	List of Item_IDs
T1	I1, I2, I5
T2	I2, I4
T3	I2, I3
T4	I1, I2, I4
T5	I1, I3
T6	I2, I3
T7	I1, I3
T8	I1, I2, I3, I5
T9	I1, I2, I3

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