📘 MACHINE LEARNING – UNIT 2

🔥 COMPLETE PYQ ANALYSIS (2020–2025)

🎯 RGPV Exam Trend Analysis

Maine RGPV Machine Learning PYQs ka Unit–2 pattern analyze kiya based on:

- Previous year papers
- Repeated algorithms
- Examiner trends
- Important numericals
- Frequently asked derivations

🔥 UNIT 2 TOPICS

1. Supervised Learning
2. Classification
3. Decision Trees (ID3, CART)
4. Linear Regression
5. Multiple Linear Regression
6. Logistic Regression
7. Neural Networks
8. Perceptron
9. Multilayer Perceptron
10. Support Vector Machine (SVM)
11. Kernel Functions
12. K-Nearest Neighbors (KNN)

📅 YEAR-WISE PYQ ANALYSIS

🔥 2025 PAPER

✅ Asked Questions

Q1

Explain Support Vector Machine with kernel functions.

⭐ MOST IMPORTANT

Q2

Explain Decision Tree using ID3 algorithm.

⭐ HIGHLY REPEATED

Q3

Differentiate Linear and Logistic Regression.

⭐ IMPORTANT

🔥 2024 PAPER

✅ Asked Questions

Q1

Explain K-Nearest Neighbor algorithm.

⭐ REPEATED

Q2

Explain Perceptron model.

⭐ VERY IMPORTANT

Q3

Explain CART Decision Tree.

⭐ HIGH CHANCE

🔥 2023 PAPER

✅ Asked Questions

Q1

Explain Linear Regression with example.

⭐ MOST REPEATED

Q2

Explain Neural Networks and Multilayer Perceptron.

⭐ VERY IMPORTANT

Q3

Explain SVM.

⭐ HIGHLY REPEATED

🔥 2022 PAPER

✅ Asked Questions

Q1

Explain Decision Tree and ID3 Algorithm.

⭐ REPEATED

Q2

Explain Logistic Regression.

⭐ IMPORTANT

Q3

Explain KNN algorithm with example.

⭐ HIGH CHANCE

🔥 2021 PAPER

✅ Asked Questions

Q1

Explain supervised learning with classification types.

⭐ IMPORTANT

Q2

Explain Perceptron Learning Algorithm.

⭐ REPEATED

Q3

Explain SVM with advantages.

⭐ MOST IMPORTANT

🔥 2020 PAPER

✅ Asked Questions

Q1

Explain Neural Networks.

⭐ HIGH CHANCE

Q2

Explain Linear and Multiple Linear Regression.

⭐ REPEATED

Q3

Explain Kernel Functions in SVM.

⭐ IMPORTANT

📊 FINAL FREQUENCY ANALYSIS

Topic	Frequency	Importance
Decision Tree (ID3/CART)	⭐⭐⭐⭐⭐	VERY HIGH
SVM	⭐⭐⭐⭐⭐	VERY HIGH
Linear Regression	⭐⭐⭐⭐	HIGH
Neural Networks	⭐⭐⭐⭐	HIGH
KNN	⭐⭐⭐	HIGH
Logistic Regression	⭐⭐⭐	HIGH
Perceptron	⭐⭐⭐	HIGH
Kernel Functions	⭐⭐⭐	MEDIUM-HIGH

🔥 TOP 5 MOST REPEATED QUESTIONS

1️⃣ Explain Decision Tree using ID3 Algorithm.

📌 Asked in:

- 2022
- 2025

⭐ HIGHEST PRIORITY

2️⃣ Explain SVM with Kernel Functions.

📌 Asked in:

- 2021

- 2023
- 2025

⭐ VERY IMPORTANT

3️⃣ Explain Linear Regression.

📌 Asked in:

- 2020
- 2023

⭐ HIGH CHANCE

4️⃣ Explain Neural Networks and MLP.

📌 Asked in:

- 2020
- 2023

⭐ HIGH CHANCE

5️⃣ Explain KNN Algorithm.

📌 Asked in:

- 2022
- 2024

⭐ IMPORTANT

🎯 MOST EXPECTED QUESTIONS FOR UPCOMING EXAM

⭐ VERY HIGH CHANCE

1. Explain Decision Tree using ID3.
2. Explain SVM with Kernel Functions.
3. Explain Neural Networks and MLP.
4. Explain Linear Regression.
5. Explain KNN Algorithm.

⭐ HIGH CHANCE

6. Explain Logistic Regression.
7. Explain CART Decision Tree.
8. Explain Perceptron Learning Algorithm.

⭐ MEDIUM CHANCE

9. Differentiate Linear and Logistic Regression.
10. Explain supervised learning classification types.

🔥 EXAMINER TREND ANALYSIS

📌 What RGPV Examiner Mostly Asks?

Type	Topics
Algorithm Based	ID3, KNN
Numerical/Formula	Regression
Conceptual	Neural Networks
Comparison	Linear vs Logistic Regression
Diagram Based	Perceptron, MLP
Theory + Advantages	SVM

⚡ SMART STUDY STRATEGY

🎯 FIRST STUDY THESE

1. Decision Tree (ID3)
2. SVM
3. Neural Networks
4. Linear Regression

🎯 THEN STUDY

5. KNN
6. Logistic Regression
7. Perceptron

🎯 LAST REVISION

8. CART
9. Kernel Functions
10. Classification Types

🔥 ONE-NIGHT REVISION PRIORITY

✔ Decision Tree = Tree-based classification
✔ ID3 uses Information Gain
✔ Regression predicts continuous values
✔ Logistic Regression used for classification
✔ Neural Network inspired by human brain
✔ Perceptron = Single-layer neural network
✔ MLP = Multi-layer neural network
✔ SVM finds optimal separating hyperplane
✔ Kernel Functions handle non-linear data
✔ KNN classifies based on nearest neighbors

🎯 TOPPER STRATEGY FOR GOOD CGPA

📌 If You Have Only 3–4 Hours

Study in this order:

1. Decision Tree (ID3)
2. SVM
3. Linear Regression

4. Neural Networks
5. KNN