

Assignment & Important Questions:

Unit-1: Introduction to Machine Learning and Python

1. What is Machine Learning? Discuss its types in detail with suitable examples and diagrams.
2. Discuss the significance of Python in data analysis and Machine Learning. Explain the role of NumPy, Pandas, and Matplotlib with code snippets.
3. Explain Supervised Learning in detail. Discuss any two algorithms and their applications.
4. Describe Unsupervised Learning. Give examples and differentiate it from Supervised Learning.
5. List some applications of Machine Learning in different domains. Briefly explain.
6. Explain the role of **Python in Data Analysis**. Mention any three libraries used and their purpose.
7. What is **NumPy**? Explain its importance in data analysis. Include any four NumPy operations.
8. Explain how data can be manipulated using **Pandas**. Give examples of at least three operations.
9. Compare and contrast **Pandas** and **NumPy** with suitable use cases.
10. Explain data manipulation and visualization using Pandas and Matplotlib. Support your answer with Python examples.
11. Explain the steps involved in data preprocessing. Explain its step with example.