

VPMP Polytechnic, Gandhinagar  
Department of Computer Engineering – Semester 5

**Assignment 1**

**Unit – I (Introduction of Machine Learning)**

- 1. List Applications of machine learning. \***
2. Differentiate between machine learning and human learning. \*
3. How does Machine Learning work? Explain it with block diagram. \*
4. List out Types of Machine Learning and explain any one in detail. \*
5. List Tools and Technology used in Machine Learning with explanation. \*
6. Describe Reinforcement Learning with diagram.

**Note: \* means compulsory question to be written in Assignment Book.**

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**Assignment 2**  
**Unit – II (Python libraries suitable for Machine Learning)**

1. How to create a series from a list, numpy array and dict?
2. Explain following function with its syntax and example. \*
  - power()
  - ptp()
  - meidan()
  - read\_CSV()
  - amax()
  - add()
  - reshape()
3. How can we sort the DataFrame?
4. How can you set the font size of a plot using Matplotlib? \*
5. Explain stack () function and array\_split () function in Numpy.
6. Write a Python program to implement the following function in Pandas. \*
  - DataFrame()
  - drop()
  - dropna()
  - duplicated()
7. Define Pandas. List key features of Pandas. \*
8. Define Numpy. List key features of Numpy. \*

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**Assignment 3**

**Unit – III (Preparing to Model and Pre-processing)**

1. Explain Ensemble Approach for performance improvement in detail. \*
2. Explain Confusion matrix with suitable example. \*
3. What are the missing values? And how do you handle missing values?
4. List types of Data in Machine Learning with explanations and examples. \*
5. Describe K-fold cross validation. \*
6. Describe Machine Learning Activities with diagram. \*
7. Define Dimensionality Reduction.

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**Assignment 4**

**Unit– IV (Supervised Machine Learning Models)**

1. Discuss K-NN algorithm in detail. \*
2. List out types of supervised learning explain any one in detail. \*
3. Write applications of Supervised Machine Learning. \*
4. List out types of Regression Analysis. Explain linear regression in detail.
5. Explain working of supervised machine learning. \*
6. Relate the appropriate data type of following examples. \*
  - Nationality of students
  - Feedback from students to faculty
  - Temperature in thermometer

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**Assignment 5**

**Unit– V (Unsupervised Machine Learning Models Unsupervised)**

1. Differentiate between Supervised and Unsupervised Learning. \*
2. Define Association with diagram. List out Association methods. \*
3. Write advantages of Unsupervised Machine Learning. \*
4. List Clustering Methods and explain any two in detail. \*
5. Classify following applications based on types of unsupervised machine learning.
  - City Planning
  - Social Network Analysis
  - Online Shopping Recommendations
6. Answer Following. \*
  - Need of unsupervised learning
  - Working of unsupervised learning

**Note: \* means compulsory question to be written in Assignment Book.**