# MACHINE LEARNING ASSIGNMENT-1

**ANS. NO.1 (D)**

**ANS.NO.2 (D)**

**ANS.NO.3 (D)**

**ANS.NO.4 (A)**

**ANS.NO.5 (B)**

**ANS.NO.6 (D)**

**ANS.NO.7 (A)**

**ANS.NO.8 (B)**

**ANS.NO.9 (D)**

**ANS.NO.10 (A)**

**ANS.NO.11 (D)**

**ANS.NO.12 (A)**

**ANS.NO.13**

This is calculated as the sum of squared distances between data points and the centers of the clusters they belong to. Inertia quantifies the within-cluster variation. Another popular metric is the silhouette coefficient, which attempts to summarize both within-cluster and between-cluster variation.

**ANS.NO.14**

To measure the quality of a clustering, we can use the average silhouette coefficient value of all objects in the data set.

**ANS.NO.15**

**Cluster Analysis**

Cluster analysis is a multivariate data mining technique whose goal is to groups objects (such as products, respondents, or other entities) based on a set of user selected characteristics or attributes. It is the basic and most important step of data mining and a common technique for statistical data analysis, and it is used in many fields such as data compression, machine learning, etc.

**Types of Cluster Analysis**

1. **Hierarchical Cluster Analysis**
2. **Central Based Clustering**

3. **Distribution Based Clustering**
4. **Density-Based Clustering**