Machine Learning Assignment-2

ANS-1-a

ANS-2-d

ANS-3-a

ANS-4-a

ANS-5-b

ANS-6-b

ANS-7-a

ANS-8-d

ANS-9-a

ANS-10-d
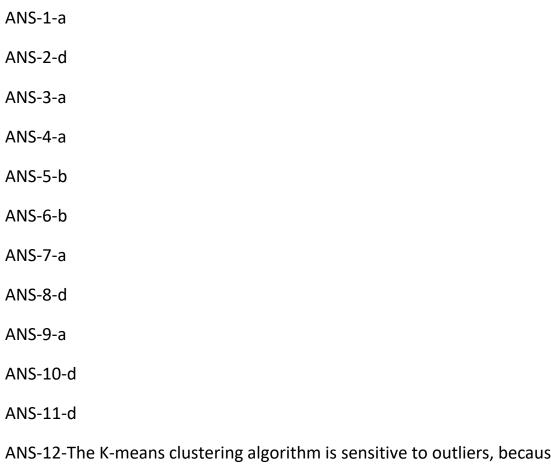
ANS-11-d

ANS-12-The K-means clustering algorithm is sensitive to outliers, because a mean is easily influenced by extreme values. K-medoids clustering is a variant of K-means that is more robust to noises and outliers.

ANS-13-Guarantees convergence. Can warm-start the positions of centroids. Easily adapts to new examples. Generalizes to clusters of different shapes and sizes, such as elliptical cluster.

ANS-14-K-Means has many drawbacks too. One of the significant drawbacks of K-Means is its non-deterministic nature. K-Means starts with a random set of data points as initial centroids. This random selection influences the quality of the resulting cluster.