

ASSIGNMENT – 1

Q1. b

Q2. d

Q3. d

Q4. a

Q5. b

Q6. b

Q7. a

Q8. b

Q9. a

Q10. a

Q11. d

Q.12. a

Q.13 How is cluster analysis calculated?.

Ans. Cluster analysis is a data analysis technique that explores the naturally occurring groups within a data set known as clusters.

Cluster analysis doesn't need to group data points into any predefined groups ,which means that it is an unsupervised learning method.

. TYPES OF CLUSTERING

- 1. Hierarchical cluster analysis**
- 2. Centroid based clustering**
- 3. Distribution based clustering**
- 4. Density based clustering**

1. Heirarchical cluster

There are two methods in hierarchical cluster i.e. first agglomerative method and secondly the divisive method.

. Agglomerative Method:

Agglomerative clustering starts with single objects and starts grouping them into clusters.

. Divisive Method:

Divisive method is another kind of heirarchical method in which clustering starts with complete data set and then starts dividing into partitions.

2. Centroid based clustering

In this type of clustering, clusters are represented by a central entity, which may or may not be a part of the given data set. K-means method of clustering is used in this method.

3. Distribution based clustering

It is a type of clustering model closely related to statistics based on the models of distribution. This type of clustering can be capture some complex properties of objects like corelation and dependence between attributes.

4. Density based clustering

In this type of clustering, clusters are defined by the areas of density that are higher than the remaining of the dataset. Objects in sparse areas are usually required to separate clusters.

Q14. How is cluster quality measured?

Ans. Cluster quality is measured by the use of average coefficient value of all objects in the data set.

. Two Methods in Cluster Quality Measured.

- 1. Supervised**
- 2. Unsupervised**

1. Supervised:

Compare a clustering against the ground truth using certain clustering quality measure.

2. Unsupervised:

Evaluate the goodness of a clustering by considering how well the clusters are separated.

Q15. What is cluster analysis and its types?

Ans. Cluster analysis is a data analysis technique that explores the naturally occurring groups within a data set known as clusters. Cluster analysis doesn't need to group data points into any predefined groups, which means that it is an unsupervised learning method.

. Types of Clusters

- 1. Centroid based/partition clustering**
- 2. Hierarchical based clustering**
- 3. Distribution based clustering**
- 4. Density based clustering**

