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## Quiz 1 - K-Means, DBSCAN and Hierarchical clustering

Type	:	Graded Quiz
Attempts	:	1/1
Questions	:	15
Time	:	25m
Due Date	:	Nov 10, 11:59 PM IST
Your Marks	:	12/15

### Instructions



## Attempt History

### Attempt #1

Nov 08, 6:48 AM

Marks: 12



#### Q No: 1

Incorrect Answer

Marks: 0/1

Assume, you want to cluster 7 observations into 3 clusters using K-Means clustering algorithm.

After first iteration clusters, C1, C2, C3 has following observations:

C1: {(2,2), (4,4), (6,6)}

C2: {(0,4), (4,0)}

C3: {(6,6), (10,10)}

What will be the cluster centroids if you want to proceed for second iteration?

☐ C1: (6,6), C2: (4,4), C3: (9,9)

☐ C1: (4,4), C2: (2,2), C3: (8,8)

Correct Option

☒ C1: (2,2), C2: (0,0), C3: (5,5)

You Selected

☐ None of these

Q No: 2

Correct Answer

Marks: 1/1

What is the full form of DBSCAN?

☐ Distance-Based Segmented Clustering of Applications with Noise

☒ Density-Based Spatial Clustering of Applications with Noise

You Selected

☐ Density-Based Segmented Clustering of Applications with Noise

☐ Distance-Based Spatial Clustering of Applications with Noise

Q No: 3

Correct Answer

Marks: 1/1

Which of the following linkage methods provides a chain like structure while clustering groups?

☒ Single Linkage

You Selected

☐ Ward Linkage

☐ Average Linkage

☐ Complete Linkage

Q No: 4

Correct Answer

Marks: 1/1

On which data type, we cannot perform cluster analysis?

☐ Text data☐ Time series data☒ All of the given options are correct

You Selected

☐ Multimedia data

Q No: 5

Correct Answer

Marks: 1/1

The goal of clustering is to-

☐ Classify the data point into different classes☒ Divide the data points into groups

You Selected

☐ All of the given options are correct☐ Predict the output values of input data points

Q No: 6

Correct Answer

Marks: 1/1

The average intra-cluster distance is given as 4.2 and the average inter-cluster distance is given as 5.7. Calculate the silhouette coefficient.

☐ 0.4524☐ 0.5623☒ 0.2632

You Selected

☐ 0.1248

Q No: 7

Correct Answer

Marks: 1/1

Which of the following characteristics are used in determining the optimal set of clusters?

☐ Small clusters☒ Both compact and distinct clusters

You Selected

☐ Compact clusters☐ Distinct clusters

Q No: 8

Incorrect Answer

Marks: 0/1

Assume, you want to cluster 7 observations into 3 clusters using K-Means clustering algorithm. After first iteration clusters, C1, C2, C3 has following observations:

C1: {(2,2), (4,4), (6,6)}

C2: {(0,4), (4,0)}

C3: {(5,5), (9,9)}

What will be the Manhattan distance for observation (9, 9) from cluster centroid C1. In second iteration.

☐  $13\sqrt{2}$ ☐  $5\sqrt{2}$ ☒ None of the given options

You Selected

☐ 10

Correct Option

Q No: 9

Correct Answer

Marks: 1/1

Which of the following is the aim of K-means clustering?

☐ Reduce the variation between the clusters

☐ Reduce the variation between and within the clusters

☐ None of the above

☒ Reduce the variation within the clusters

You Selected

Q No: 10

Incorrect Answer

Marks: 0/1

How many clusters will be formed at the end of final step in Agglomerative clustering ?

☐  $\log(n)$ , where  $n$  is number of samples

☒ Based on choice of  $K$

You Selected

☐ 1

Correct Option

☐ 2

Q No: 11

Correct Answer

Marks: 1/1

Why are linkage methods used?

☒ To measure inter-cluster distance

You Selected

☐ To link all the clusters

☐ To measure intra-cluster distance

☐ To link the similar clusters

Q No: 12

Correct Answer

Marks: 1/1

What is the first step in agglomerative hierarchical clustering

☒ a. Assume each data point is a cluster

You Selected

☐ Form k clusters

☐ None of the above

☐ Reduce the variation within the clusters

Q No: 13

Correct Answer

Marks: 1/1

For which value of p, Minkowski distance is equal to the Euclidean distance ?

☒ 2

You Selected

☐ 3

☐ 1

☐ 0

Q No: 14

Correct Answer

Marks: 1/1

The initial metrics distance between B and A is 4, and the distance between C and A is 6. Assuming the cluster BC is formed, what is the distance between the cluster (BC) and A using complete and single link method

☐ 4,5

☐ 5,6

☒ 6,4

You Selected

☐ 4,6

Q No: 15

Correct Answer

Marks: 1/1

Which one of the following techniques does not require the variables to be separated as dependent or independent?

☐ Regression

☐ Boosting

☐ Classification

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☒ Clustering

You Selected

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