Started on	Friday, March 2, 2018, 3:23 AM
State	Finished
Completed on	Friday, March 2, 2018, 3:37 AM
Time taken	13 mins 56 secs
Grade	**60.00** out of 60.00 (**100**%)

Question 1

Complete

4.00 points out of 4.00

What can the Elbow method be used for with the k-means algorithm?

Select one:

- a. Finding the center of the clusters
- b. Finding the best number of datapoints
- c. Finding the best number of features
- d. Finding the best number of clusters

Question 2

Complete

4.00 points out of 4.00

How does the Adjusted Rand Index method measure the performance of clustering?

Select one:

- a. It takes values in the range [0, 1] and measures the agreement, normalizing against chance, between two sets of cluster labels.
- b. It takes values in the range [0, 1] and measures the similarity of a cluster.
- c. It takes values in the range [-1, 1] and does not require ground truth labels.
- d. It takes values in the range [0, 1] and measures the index of how data are assigned to a cluster.
- e. It takes values in the range [-1, 1] and measures the similarity between predicted and true labels.

Question 3

Complete

4.00 points out of 4.00

In the context of k-Means, how are cluster centers initialized?

Select one:

- a. Randomly
- b. By picking a random feature and finding its mean
- c. By taking the mean of each feature
- d. By taking the mean of each datapoint

Question 4

Complete

4.00 points out of 4.00

Which of the following hyperparameter may affect the performance of the `KMeans` estimator within the `cluster` module of the scikit learn library?

Select one or more:

- [ ] a. inertia_
- [x] b. random_state
- [x] c. max_iter
- [ ] d. labels_
- [x] e. n_clusters
- [x] f. n_init

Question 5

Complete

4.00 points out of 4.00

Is the KMeans algorithm guaranteed to converge?

Select one:

- (•) a. Yes
- ( ) b. No

Question 6

Complete

4.00 points out of 4.00

What are some advantages of DBSCAN algorithm over the k-means algorithm?

Select one or more:

- [ ] a. Clusters are not defined by connecting points.
- [ ] b. Hyperparameter tuning is not required to achieve optimal results.
- [x] c. It automatically determines the number of clusters within a data set.
- [x] d. It is a density-based clustering algorithm, the discovered clusters can have arbitrary shapes.

Question 7

Complete

4.00 points out of 4.00

Which class in sci-kit learn contains the implementation for DBSCAN?

Select one:

- (•) a. sklearn.cluster.DBSCAN
- ( ) b. dbscan
- ( ) c. sklearn.Cluster.DBSCAN
- ( ) d. sklearn.cluster.dbscan
- ( ) e. sci-kit.cluster.DBSCAN

Question 8

Complete

4.00 points out of 4.00

Which of the following hyperparameter(s) can be tuned to improve the performance of a DBSCAN model?

Select one or more:

- [ ] a. matrices
- [x] b. min_samples
- [x] c. eps
- [ ] d. random_states

Question 9

Complete

4.00 points out of 4.00

Which of the options best describes the DBSCAN algorithm?

Select one:

- ( ) a. Regression algorithm
- (•) b. Density-based clustering algorithim
- ( ) c. Spatial clustering algorithm
- ( ) d. Classification algorithm
- ( ) e. Feature selection algorithm

Question 10

Complete

4.00 points out of 4.00

What does DBSCAN stand for?

Select one:

- ( ) a. Doing bad sparse coding of applications with noise
- (•) b. Density-based spatial clustering of applications with noise
- ( ) c. Doubling brackets sparse coding applications noise

Question 11

Complete

4.00 points out of 4.00

What kind of classification does the GMM provide?

Select one:

- ( ) a. Gaussian
- (•) b. Probabilistic
- ( ) c. Mixture
- ( ) d. Deterministic

Question 12

Complete

4.00 points out of 4.00

Which of the following are hyperparameters of `GaussianMixture` estimator in the `mixture` module?

Select one or more:

- [x] a. n_components
- [x] b. covariance_type
- [x] c. init_params
- [x] d. tol
- [ ] e. n_iter_
- [x] f. n_init

Question 13

Complete

4.00 points out of 4.00

What are the disadvantages of KMeans algorithm?

Select one or more:

- [ ] a. It cannot handle cluster models that are *circular.*
- [x] b. It lacks probabilistic cluster assignment.
- [ ] c. It is not flexible enough to account for oblong and circular clusters.
- [x] d. It lacks flexibility in cluster shape.

Question 14

Complete

4.00 points out of 4.00

What algorithm is used to construct a Gaussian Mixture Model?

Select one:

- ( ) a. M-step
- ( ) b. E-step
- (•) c. Expectation-Maximization
- ( ) d. Expectation-Minimization

Question 15

Complete

4.00 points out of 4.00

Which of the following can be used to help determine the number of clusters to use for the Gaussian Mixture Model?

Select one or more:

- [ ] a. Expectation–maximization
- [x] b. Bayesian information criterion
- [x] c. Akaike information criterion
- [ ] d. Gaussian Mixture