

First name:

Family name:

Group :

ASSESSMENT 2 : MACHINE LEARNING LABORATORY ASSESSMENT

(Duration: ½ hour)

Exercise: For each question, tick (✓) the correct answer.

1. What is the primary purpose of lambda functions in Python?
 - ☐ To create loops
 - ☐ To define anonymous functions for short-term use
 - ☐ To replace all named functions
 - ☐ To handle file operations
2. What does the shape attribute of a DataFrame return?
 - ☐ Column names
 - ☐ Data types
 - ☐ Number of rows and columns
 - ☐ Memory usage
3. Which of these is NOT a valid strategy for handling missing values?
 - ☐ Dropping all rows with missing values
 - ☐ Replacing with column mean
 - ☐ Using a constant value
 - ☐ Ignoring them during analysis
4. What does fit() do in scikit-learn models?
 - ☐ Trains the model and returns predictions
 - ☐ Only scales the data
 - ☐ Learns the model parameters
 - ☐ Both a and c
5. In LinearRegression() from sklearn.linear_model, which attribute stores the weights of the model?
 - ☐ model.weights_
 - ☐ model.intercept_
 - ☐ model.coef_
 - ☐ model.slope_
6. Which metric is not suitable for evaluating classification models?
 - ☐ accuracy_score()
 - ☐ mean_squared_error()
 - ☐ f1_score()
 - ☐ roc_auc_score()
7. Which class is used to implement polynomial regression in scikit-learn?
 - ☐ LinearRegression
 - ☐ PolynomialRegression
 - ☐ PolynomialFeatures + LinearRegression
 - ☐ RidgeCV
8. What is the output of KMeans(n_clusters=3).fit(X).labels_
 - ☐ Centroids
 - ☐ Cluster assignments for each point
 - ☐ Inertia value
 - ☐ Silhouette scores
9. Which metric evaluates K-Means clustering quality?
 - ☐ accuracy_score
 - ☐ silhouette_score
 - ☐ f1_score
 - ☐ roc_auc_score
10. What is the purpose of n_init=10 in KMeans?
 - ☐ Runs K-Means 10 times and picks the best result
 - ☐ Limits iterations to 10
 - ☐ Sets 10 clusters
 - ☐ Scales data 10 times
11. Which class implements L1 regularization in sklearn?
 - ☐ Ridge()
 - ☐ Lasso()
 - ☐ ElasticNet()
 - ☐ Regularization (penalty='l1')
12. In multiclass logistic regression, setting multi_class='multinomial' enables:
 - ☐ One-vs-Rest (OvR) strategy
 - ☐ Softmax regression
 - ☐ Binary classification only
 - ☐ L1 penalty for feature selection

13. In SVM, what does the parameter C control?

- ☐ The number of support vectors
- ☐ The trade-off between margin width and classification error
- ☐ The degree of the polynomial kernel
- ☐ The learning rate

14. The init parameter in KMeans() is used to:

- ☐ Choose the number of clusters
- ☐ Select the algorithm
- ☐ Define how initial centroids are chosen
- ☐ Set early stopping

15. k-means++ improves:

- ☐ Speed by reducing iterations
- ☐ Initial centroid placement to avoid poor local optima
- ☐ Handling of categorical features
- ☐ Noise point detection

Good Luck 😊