

Air University, Islamabad

Final Term Examination Spring 2022

Student Id: _____

Class: BSCS-8

Subject: Data Science Lab

Total Marks: **40**

Lab Instructor: Muhammad Imran

Exam Day: Friday (31-May -2022)

Exam Timing: **11:30 am to 02:00 am**

Instructions:

You are required to perform all the tasks in R Studio and submit a PDF file containing your code, output and explanation. ALSO Submit the Screenshot of your working console for every question (Do not crop the Screenshot). Late submissions will not be graded.

Task 1:

15 Marks

- Read the dataset provided to you
- Apply different data exploratory techniques for data cleaning.
- These may include dataset demonstration, removing null values and outliers, normalizing categorical values etc.

Task2:

25 Marks

(Regression)

- a) Plot dependent and independent variable to visualize data points.
- b) Split the data in training and testing data
- c) Apply linear regression on attributes of training data and plot the line graph and view the summary of fitted model.
- d) Apply polynomial regression with degree 2 and 3 and view the summary of trained model.
- e) Plot the graph for this model.
- f) Predict the test results using testing data.

OR

(Classification)

Implement SVM on the dataset provided to you. Indicate all your steps clearly given below:

- a) Import necessary libraries
- b) Create a sample dataset
- c) Classify using SVM and plot
- d) Use linear kernel to fit SVM
- e) Evaluate the model and create grid
- f) Plot support vector classifier with linear kernel

Display the results with confusion matrix in case of SVM

Best of Luck!

