Practice Exam – Bike Sharing Demand (SOA PA 12/7/20)

**Instructions to Candidates: Please remember to avoid using your own name within this document or when naming your file. There is no limit on page count.**

As indicated in the instructions, work on each task should be presented in the designated section for that task.

## Task 1 – Examine each variable and make appropriate adjustments

## Task 2 – Consider a new variable

## Task 3 – Write an overview of the data for your actuarial manager

## Task 4 – Select an interaction to consider for your model

## Task 5 – Perform a k-means cluster analysis

## Task 6 – Construct a decision tree

## Task 7 – Construct a boosted decision tree

## Task 8 – Compare distribution choices for a generalized linear model (GLM)

## Task 9 – Evaluate the interaction term

## Task 10 – Evaluate the cluster variable in the GLM

## Task 11 – Select the final model to present to the client

## Task 12 – Write an executive summary for the client