Exam PA June 14, 2019 Project Report Template

**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 – Explore the relationship of each variable to *Crash\_Score* (5 points)

## Task 2 – Reduce the number of factor levels where appropriate (5 points)

## Task 3 – Use observations from principal components analysis (PCA) to generate a new feature (9 points)

## Task 4 –Select an interaction (7 points)

## Task 5 – Select a distribution and link function (10 points)

## Task 6 – Select features using AIC or BIC (12 points)

## Task 7 – Validate the model (6 points)

## Task 8 – Interpret the model (9 points)

## Task 9 – Investigate ridge and LASSO regressions (12 points)

## Task 10 – Consider a decision tree (5 points)

## Task 11 – Executive summary (20 points)