**STU22004 – Lab Assignment 3**

**Hint: For each question you are required to calculate the mean of results for 200 iterations.**

**Q1.**

Assume that the lifetime of the lamps made by factory A follows an Exponential distribution with average of 24000 hours. Assume we have of these lamps, and therefore the total time that we can use them would be equal to .

The percentage of the time that we would use the first lamp is therefore presented as .

For values of and using 10,000 random samples lamps, estimate the percentage defined above and plot the results verses

**Q2.**

By generation 10,000 samples from random variable find the value of for which is maximum. Assume .

Submit **one** R Script. The file name has to be in this format:

A3-Firstname-Surname.R Example: **A3-Bahman-Honari.R**