PES University, Bangalore

(Established under Karnataka Act No. 16 of 2013)

UE19CS203 – STATISTICS FOR DATA SCIENCE

Unit - 3 - Probability Distributions

QUESTION BANK

Maximum Likelihood Estimation

1. A random sample of 10 weights (in pounds) of Annie's class mates are given as 115 122 130 127 149 160 152 138 149 180

$$\hat{\mu} = \sum_{i=1}^{n} \frac{x_i}{n} = \bar{X}$$

$$\hat{\mu} = \frac{1}{10}(115 + 122 + 130 + 127 + 149 + 160 + 152 + 138 + 149 + 180)$$
$$= 142.2$$

2. The following data are the observed frequencies of occurrence of domestic accidents: we have n = 647 data as follows

Number of Accidents	Frequency
0	447
1	132
2	42
3	21
4	3
5	2

$$\hat{\lambda} = \frac{1}{n}\sum_{i=1}^{n} x_i = \bar{X}$$

$$= \frac{(447 * 0) + (132 * 1) + (42 * 2) + (21 * 3) + (3 * 4) + (2 * 5)}{674}$$

$$= 0.465$$

Source:

Problem Source - http://wwwf.imperial.ac.uk/

Numerical Data Source: https://online.stat.psu.edu/stat414/