(*Knowledge for Development*)

KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2020/2021 ACADEMIC YEAR

FIRST YEAR SUPPLEMENTARY/SPECIAL EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURAL ECONOMICS & RESOURCE MANAGEMENT

COURSE CODE: AEC 125
COURSE TITLE: STATISTICS FOR ECONOMISTS

DATE: 1ST OCTOBER 2021 **TIME:** 8 – 10 AM

INSTRUCTIONS TO CANDIDATES

Answer Question One and any other two (2) Questions.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over

KIBU observes ZERO tolerance to examination cheating

Q1.

Write short notes on the following

a) Population and sample **(4 marks)**
b) Descriptive and inferential statistics **(4 marks)**
c) Null and alternative hypothesis **(4 marks)**
d) Parameter and statistic **(4 marks)**
e) Mutually exclusive and non-mutually exclusive events **(4 marks)**

f) A sample of 800 accounts was taken to test the accuracy of posting and balancing accounts where in 100 mistakes were found.

Required

i) Find out the population proportion using 95% confidence level **(5 marks)**
ii) Determine the confidence interval **(5 marks)**

Q2.

Explain the various sampling methods in statistics **(20 marks)**

Q3.

b) The cans in a sample of 20 cans of fruit contain net weights of fruit ranging from 19.3 to 20.9 as shown below.

19.7, 19.9, 20.2, 19.9, 20.0, 20.6, 19.3, 20.4, 19.9, 20.3, 20.1,
19.5, 20.9, 20.3, 20.8, 19.9, 20.0, 20.6, 19.9, 19.8

Required

i) By grouping the data into 6 classes determine the class midpoints **(5 marks)**
ii) Compute the absolute frequency **(5 marks)**
iii) Compute the relative frequency **(5 marks)**
iv) Compute the cumulative frequency **(5 marks)**

Q4.

a) Explain the significance of statistics **(10 marks)**

b) Suppose Y is a normally distributed random variable with a mean of 10 and variance of 4. Find the probability that Y will assume a value between 8 and 12 **(5 marks)**

c) Find the probability of X in (Q4,b above) assuming a value smaller than 8 or larger than 12 **(5 marks)**

Q5.

a) Explain Five characteristics of statistical data **(10 marks)**

b) In a sample of 560 candidates, 60 were male. Estimate the population proportion at 95% confidence interval. **(5 marks)**

c) A firm wants to know with a 95% level of confidence if it can claim that the boxes of detergent it sells contain more than 500g of detergent. From past experience the firm knows that the amount of detergent in the boxes is normally distributed. The firm takes a random sample of n=25 and finds that the hypothesized mean=520 g with a standard deviation of 75 g. Test the hypothesis that the mean is >500 g. **(5 marks)**