



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF AGRICULTURAL AND FOOD SCIENCES

**THIRD YEAR FIRST SEMESTER UNIVERSITY EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION & EXTENSION**

2017/2018 ACADEMIC YEAR

REGULAR

COURSE CODE: SBI 3316/SZL 308

COURSE TITLE: BIOSTATISTICS

EXAM VENUE: LAB 10

STREAM: BSc. (Agricultural Education & Extension)

DATE: 15.12.17

EXAM SESSION: 9.00 – 11.00 AM

TIME: 2 HOURS

Instructions:

- 1. Answer ALL questions in section A and ANY other 2 Questions in section B.**
- 2. Candidates are advised not to write on question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**
- 4. Candidates are advised to carry a scientific calculator for this paper**

SECTION A [30 MARKS]

Answer ALL questions from this Section

1. Define the following terms:
 - a. Statistics (4 Marks)
 - b. Variable (4 Marks)

2. Differentiate between the following
 - a. Qualitative and quantitative data (4 Marks)
 - b. Kurtosis and Skewness (4 Marks)

3. Explain the following statistical terms
 - a. Discrete variable (4 Marks)
 - b. Standard deviation (4 Marks)

4. Discuss any three roles of statistics in contemporary society. (6 Marks)

SECTION B [40 MARKS]

Answer ANY TWO questions from this section

5. The following data is time in minutes for each of two extension officers to explain an agricultural concept to farmers on a field day.

30 27 32 31 35 28 33 25 35 29 33 40

- a) Draw a stem and leaf plot for the data [3 Marks]

- b) Find the following summaries of the data:
 - i. Mean, [2 Marks]
 - ii. Median, [2 Marks]
 - iii. Range and [2 Marks]
 - iv. Interquartile range. [2 Marks]

- c) Find the variance and standard deviation of the data. [4 Marks]

- d) Find mean of grouped data indicated in the Table below. [5 Marks]

University students mass (kg)	Frequency (f)		
60-62	5		
63-65	18		
66-68	42		
69 -71	27		
71-72	8		

6. The table below shows the results of a study on 102 students at City Campus in which the Biostatistics Lecturer examined association between the absence of students and passing exams for his class during the second semester.

	Most classes attended	Few classes attended	Total
Passed Exams	33	19	52
Failed Exams	39	11	50
Total	72	30	102

- i. Find the probability that a randomly selected student failed his/her exams. **[5 marks]**
 - ii. Find the probability that a randomly selected student has passed and attended few classes **[5 marks]**
 - iii. Find the probability that a randomly selected student has passed exams **or** is always present in class **[5 marks]**
- b) Identify the following measures either as qualitative or quantitative [5 Marks]**
- i. Varieties of sorghum grown in Bondo Sub County.
 - ii. Marital status of all sampled respondents in a HIV/AIDS survey study.
 - iii. Gender of the first 300 students admitted in Agribusiness Management course at City Campus.
 - iv. The scores of 120 students in a Statistics test.
 - v. The ages of fifty randomly selected fashion models.

7. The table below gives the frequency distribution of the number of bags of wheat harvested each season during the past 30 seasons at KALRO Njoro on-station plots.

Number of bags	Number of days
10-12	4
13-15	12
16-18	20
19-21	14

- a). (i) Draw a bar graph to illustrate these data. **[6 Marks]**
 (ii) Give an interpretation of what is shown from the bar graph **[4 Marks]**
- b). The ratio of the standard deviation to the mean is called coefficient of variation, find this ratio. **[6Marks]**
- c). Outline any four measurement scales used in statistics. **[4 Marks]**