



GARISSA UNIVERSITY

UNIVERSITY EXAMINATION **2017/2018** ACADEMIC YEAR **SECOND** **THIRD** SEMESTER EXAMINATION

SCHOOL OF EDUCATION ARTS AND SOCIAL SCIENCE

FOR THE DEGREE OF BACHELOR OF EDUCATION ARTS

COURSE CODE: BAS 202

COURSE TITLE: SOCIAL STATISTICS

EXAMINATION DURATION: 2 HOURS

DATE: 08/08/18

TIME: 2.00-4.00 PM

INSTRUCTION TO CANDIDATES

- The examination has FIVE (5) questions
- Question ONE (1) is COMPULSORY
- Choose any other TWO (2) questions from the remaining FOUR (4) questions
- Use sketch diagrams to illustrate your answer whenever necessary
- Do not carry mobile phones or any other written materials in examination room
- Do not write on this paper

This paper consists of FOUR (4) printed pages

please turn over



QUESTION ONE (COMPULSORY)

- (a) Examine any five (5) applications of statistics in day-to-day activities. **[10 marks]**
- (b) Using appropriate example, distinguish class limit from class boundary. **[4 marks]**
- (c) Using relevant examples, explain the following levels of measurement.
 - i. Nominal. **[4 marks]**
 - ii. Ordinal. **[4 marks]**
 - iii. Ratio. **[4 marks]**
 - iv. Interval. **[4 marks]**

QUESTION TWO

- (a) What is a hypothesis? **[2 mark]**
- (b) During the development of a research proposal on religion and development, a community development officer came across the hypotheses statistical terms given below. He requested you to formulate relevant hypotheses for the study. States one hypothesis from each of the given terms.
 - i. $H_1: \mu_1 < \mu_2$ **[2 marks]**
 - ii. $H_0: \mu_1 = \mu_2$ **[2 marks]**
 - iii. $H_1: \mu_1 > \mu_2$ **[2 marks]**
 - iv. $H_1: \mu_1 \neq \mu_2$ **[2 marks]**
- (c) Differentiate between Type I error and Type II error in hypothesis testing. **[4 marks]**
- (d) Giving an example, explain what causes the error in each of 2c above. **[6 marks]**

QUESTION THREE

In an experiment on immunization of cattle from East Coast Fever (ECF) in Garissa County the following results were obtained.

Cattle	Affected	Not affected
Immunized	12	26
Not Immunized	16	6

- a) State an appropriate null hypothesis for the above experiment. **[2 marks]**
- b) State an appropriate alternate hypothesis for the above experiment. **[2 marks]**



- c) Use an appropriate test to evaluate the effect of vaccine in controlling cattle susceptibility of ECF. **[12 marks]**
- d) Interpret the results of the above experiment. **[4 marks]**

QUESTION FOUR

It is thought that the number of completed community development projects is dependent on ages of the project officials. A survey was conducted which recorded the number of completed community projects and the age of the project chairpersons. The results were as follows:

No of completed projects	10	5	9	8	12	19	17	16	19	18	7	6
Age of project chairpersons	35	30	45	39	53	75	70	63	65	77	57	52

- a) State one null and one alternate hypothesis for the above survey. **[4 marks]**
- b) Use spearman’s rank correlation co-efficient to calculate the degree of association between completion of community development projects and age of the project chairpersons. **[9 marks]**
- c) Calculate the coefficient of determination and interpret the results. **[4 marks]**
- d) State any three properties of a normal curve. **[3 marks]**

QUESTION FIVE

The following figures show household income from livestock sales (in "000") in 2015.

Households’ income (in 000)	No of households
200-249	36
250-299	24
300-349	42
350-399	18
400-449	20
450-499	20
500-549	16



550-599	12
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- (i) Draw a histogram for the households' income distribution. **[3 marks]**
- (ii) Calculate the median income. **[5 marks]**
- (iii) Calculate the mean income and standard deviation. **[5 marks]**
- (iv) Comment on any 2 merits of mean as a measure of central tendency. **[2 marks]**

Explain any two uses of range as a measure of dispersion.

