



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2018/2019

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE IN ANIMAL HEALTH AND PRODUCTION

KAS 301: RESEARCH METHODS IN AGRICULTURE

DATE: Monday, 19th November 2018

TIME: 2.00 p.m. - 4.00 p.m.

INSTRUCTIONS:

Answer ALL questions in section A and any other two questions in section B.

Section A (40 marks)

1. State the role of agricultural research in Kenya. (5 marks)
2. Give the qualities of good objectives in research. (5 marks)
3. State the characteristics of good research problem. (5 marks)
4. Differentiate the following:
 - (i) Type I error and Type II error (2 marks)
 - (ii) Randomization and Replication (2 marks)
 - (iii) Parameter and Statistic (2 marks)
5. Differentiate between qualitative research and quantitative research. (4 marks)
6. Give **three (3)** advantages and **two (2)** disadvantages of a completely randomized design. (5 marks)
7. Give **three (3)** advantages and **two (2)** disadvantages of a randomized complete block design. (5 marks)
8. Give **five (5)** sources of research ideas in the selection of research topic. (5 marks)

Section B (30 marks)

1. Discuss the planning phase of the research process. (15 marks)
2. (a) Differentiate between correlation and regression. (2 marks)
(b) Differentiate between coefficient of correlation (r) and coefficient of determination (R^2). (2 marks)
(c) Estimate the simple regression equation of weight of heart girth of cows using the following sample: (11 marks)

Cow	1	2	3	4	5	6
Weight (Y)	641	633	651	666	688	680
Heart girth (X)	214	215	216	217	219	221

3. The following are weekly first lactation yields of Friesian cows on 4 different diets. Two weekly yields were incomplete due to death of the cows. The researcher is interested in determining whether average weekly yield differ for the four diets. Each diet being a treatment.

Diet	Weekly lactation yields					
1	231	209	226	214	230	218
2	160	183	210	179	191	-
3	251	246	238	227	240	-
4	195	188	204	192	210	197

- (a) Calculate ANOVA for the data. (12 marks)
- (b) Are there significant diet effects at $\alpha = 0.05$? (3 marks)