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1ST SEM. 2018/2019

UNIVERSITY OF ESWATINI

RE-SIT EXAMINATION PAPER

PROGRAMME:	**B.Sc. ANIMAL SCIENCE AND B.Sc. ANIMAL SCIENCE (DAIRY OPTION) YEAR III**
COURSE CODE:	**ASC305**
TITLE OF PAPER:	**RESEARCH METHODS**
TIME ALLOWED:	**TWO (2) HOURS**
INSTRUCTIONS:	**ANSWER ANY FOUR (4) QUESTIONS.**

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QUESTION 1

Briefly discuss the following:

a. Simple random sampling **(13 Marks)**
b. Unintentional bias and how to safeguard against unintentional bias **(12 Marks)**

(25 Marks)

QUESTION 2

Write short notes on the following:

a. Data analysis for Completely Randomized Design **(10 Marks)**
b. Blocking **(8 Marks)**
c. Purpose of a literature review **(7 Marks)**

(25 Marks)

QUESTION 3

Discuss the Randomized Complete Block Design under the following topics:

a. Description **(12 Marks)**
b. Randomization procedure **(3 Marks)**
c. Example using four (4) blocks and four (4) treatments **(5 Marks)**
d. Model statement **(5 Marks)**

(25 Marks)

QUESTION 4

After learning and talking to farmers, a student in the University of Eswatini, Faculty of Agriculture observes that the productivity of dairy animals in small scale farms in communal areas of the country is very low compared to the large scale commercial farms. The low productivity is characterised by low quantities of milk yield, poor reproductive performance and high calf mortality. The student suspects that the high cost of dairy meal is one of the reasons for the poor status of milk production by the communal farmers. Further, the student has established that there is a very good market for milk and milk products in the country.

a. Develop a research topic for this study. **(3 Marks)**
b. Write a brief problem statement for the study. **(5 Marks)**
c. Formulate the general objective and specific objectives. **(11 Marks)**
d. Write the hypothesis of the study. **(6 Marks)**

(25 Marks)

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QUESTION 5

An Animal Science (Dairy Option) student is interested in investigating the effect of adding yeast to goat feed on milk fat content. The researcher would have preferred to carry out the study using goats of one breed but this was not possible since only 9 goats of different breeds are available as follows: 3 Saanen, 3 Ngunis and 3 Angoras. Within each breed, 3 goats are randomly allocated to each of the 3 levels of yeast culture. The data obtained are shown below:

Level of yeast	Breed		
	Saanen	**Angora**	**Nguni**
1	2.3	4.0	5.4
2	3.1	3.9	5.6
3	3.7	4.4	6.3

a. What experimental design is this? **(3 Marks)**
b. What are the advantages of this design? **(6 Marks)**
c. How many treatments are in this study? **(2 Marks)**
d. Is there a blocking factor in this experiment? Explain your answer. **(5 Marks)**
e. Layout the hypothesis testing protocol for this study **(9 Marks)**

(25 Marks)