2ND SEMESTER 2011/2012

UNIVERSITY OF SWAZILAND

FINAL EXAMINATION PAPER

PROGRAMME: BSc. ANIMAL SCIENCE III,
BSc. ANIMAL SCIENCE DAIRY OPTION III,

COURSE CODE: AS 308

TITLE OF PAPER: RESEARCH METHODS

TIME ALLOWED: TWO (2) HOURS

INSTRUCTIONS: ANSWER ANY FOUR QUESTIONS

THIS PAPER MAY NOT BE OPENED UNTIL THE CHIEF INVIGILATOR HAS GRANTED PERMISSION

QUESTION 1

Define the following: (5 points each)

a) Basic research
b) Applied research
c) A sample
d) Deliberate sampling bias
e) Purposive sampling

QUESTION 2

i). An animal nutrition researcher has four sheep fitted with rumen cannula and wants to test the rate of rumen degradation of protein for four different feeds.
ii). What experimental design would you suggest in this situation? Justify your answer. (8)
iii). State one advantage and three disadvantages of the design you suggested. (8)
iv). List three factors that are considered when choosing a sampling method. (6)
v). Name the three broad classifications of numbers in research. (3)

QUESTION 3

a) List five characteristics of a well designed experiment (15)
b) Define the term experimental unit (4)
c) Why is it critical to be able to correctly identify the experimental unit in a given experimental situation (2)
d) Give two reasons why is it important to review literature related to proposed research work before writing a research proposal? (4)

QUESTION 4

Discuss completely randomized experimental designs (CRD) under the following headings

i). Brief description of the design (6)
ii). Randomization (4)
iii). Advantages (6)
iv). Disadvantages (6)
v). Name the most appropriate statistical test one would perform if a CRD experiment had a single factor with three levels and the response variable was quantitative (3)

QUESTION 5

a) List five possible starting points or sources of a research topic (10)
b) Using an illustrative example discuss general and specific research objectives (10)
c) List five factors which have an effect on the minimum sample size required for a given experimental situation (5)