



**1<sup>st</sup> SEM.2006/2007**

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**UNIVERSITY OF SWAZILAND  
FINAL EXAMINATION PAPER**

**PROGRAMME: BACHELOR OF SCIENCE IN ANIMAL SCIENCE  
YEAR III**

**COURSE CODE: APH 307**

**TITLE OF PAPER: RESEARCH METHODS IN ANIMAL PRODUCTION**

**TIME ALLOWED: TWO (2) HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE (1) AND ANY OTHER THREE  
(3) QUESTIONS**

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THE CHIEF INVIGILATOR**

**QUESTION 1**

A study was conducted to determine the effect of three feed treatments on the live weight gain of goats. The goats were selected to have similar age and sex. Besides, the initial body weight of all goats was also similar. The average daily body weight gain recorded for six months under each treatment is indicated below.

Treatments				
T (Control)	T1	T2	T3	
0.1	0.3	0.1	0.06	
0.2	0.3	0.1	0.07	
0.05	0.4	0.09	0.03	
0.3	0.2	0.08	0.02	

Data analysis for the above data shows the following results.

**SUMMARY**

Groups	Count	Sum	Average	Variance
T (Control)	4	0.65		0.012292
T1	4	1.2		0.006667
T2	4	0.37		9.17E-05
T3	4	0.18		0.000567

**ANOVA**

Source of Variation	SS	df	MS	F	P-value	F crit
Between treatments		3	0.049317	10.05607	0.001354	3.4903
Within treatments		12	0.004904			
Total	0.2068	15				

Based on the above data and analysis answer the following questions

A) Describe the analysis of variation which is used in the analysis of the data.

(6 points)

B) Compute

-treatment means

(3 points)

-sum of squares between treatments

(3points)

-sum of square within treatments

(3 points)

C) Explain briefly the results of the analysis

(10 points)

**QUESTION 2**

- A. Describe the interviewing methods and sampling techniques you would consider to conduct a survey under the title "Characterization of indigenous poultry production systems in Swaziland". (15 points)
- B. Describe the factors that you would need to consider to determine the size of your sample. (10 points)

**QUESTION 3**

List and indicate the features of major sections of a research proposal you would prepare for presentation to sponsors for approval and funding. (25 points)

**QUESTION 4**

- A) Discuss how blocking and randomization are carried out in animal production experiments. (15 points)
- B) Explain the significance of standard error in reporting results of an experiment. (10 points)

**QUESTION 5**

Give an account of what preparations you would make in order to conduct a survey on "Indigenous cattle-rangeland management practices in the lowveld of Swaziland". (25 points)