

Faculty of Animal Science & Export Agriculture  
Uva Wellassa University of Sri Lanka

B.ASc. Degree Programme  
Year II Semester II  
End Semester Examination – June/ July 2009



ANS 233-2 Selection and Animal Breeding Techniques - Essay (Section II)

**Instructions**

Answer all questions in Section I in given space.

No. of questions : Two (02)

No. of pages : Two (02)

Time : One hour (01 hr.)

Total marks allocated : 60%

Index No:

1. A beef cattle breeder favours normal body size because of management difficulties associated with larger body size. He is going to practice a selection method favouring heterozygote, with two different selection coefficients for different genotypes. Where  $S_1=0.8$  and  $S_2= 1$ .

Genotype	RF
AA	$1-S_1$
Aa	1
aa	$1-S_2$

- i) **Situation 1** - If the initial gene frequencies are;

$$p = f(A) = 0.6$$

$$q = f(a) = 0.4$$

Calculate the allelic frequency for both alleles

- ii) **Situation 2**- Initial gene frequencies are;

$$p = f(A) = 0.4$$

$$q = f(a) = 0.6$$

Calculate the allelic frequency for both alleles

- iii) Discuss your answer, state explaining as why you're going to get above situation.

(100 marks)

2.

i) Briefly explain whether a **natural population of wild cattle** or a **domesticated population of Friesian** is more likely to have higher Broad sense heritability ( $H^2$ ) for the trait of body size.

(40 marks)

ii) Write short notes on,

a) **Traditional Breed Structure**

(30 marks)

b) **Independent culling level method**

(30 marks)

[End of Section II]