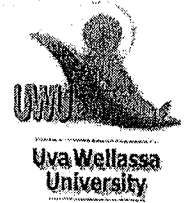


Faculty of Animal Science & Export Agriculture  
Uva Wellassa University of Sri Lanka



**BASc Degree Programme**  
**Year I Semester I**  
**End Semester Examination – September/ October 2013**

**ANS 101-2 Principles of Genetics and Breeding**  
**Essay (Section II)**

**Instructions**

Answer all questions in Section II

No. of questions : Two (02)

No. of pages : One (01)

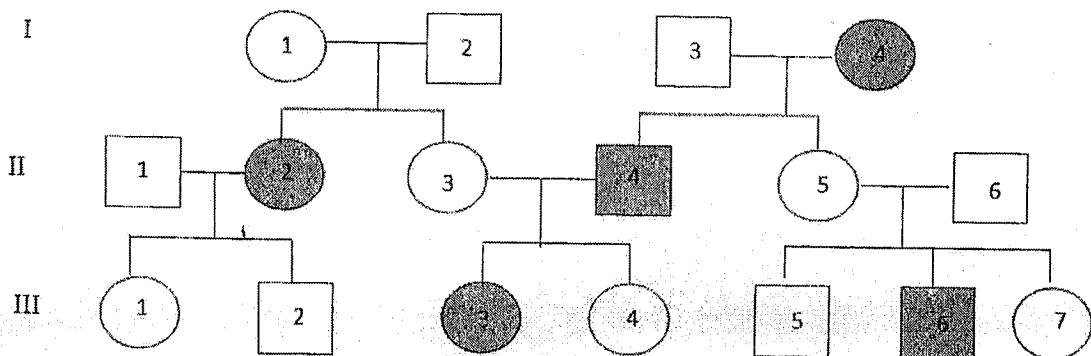
Time : One hour (01 hr)

Total marks allocated :60%

I.

I. Write an essay on **Traditional Animal Breeding Scheme** (50 marks)

II. Use the following pedigree chart to answer the questions below



a) Write the appropriate gender for each of the following:

I-4, III-5, II-6, I-1, III-3

b) How many individuals have the trait being studied?

c) How many females have the trait being studied?

d) How many males have the trait being studied?

e) Write down the appropriate relationship between the following individuals.

III-5 and III-7, I-1 and III-3, III-2 and II-1, II-2 and II-3

f) Is the autosomal trait being studied dominant or recessive? Explain. (50 marks)



2.

I. Why breeding is important to improve Animal productivity

(50 marks)

II. Gene 'T' controlling the height of the plants. Allele 'T' is for the tallness of plants and 't' is the alternative recessive allele. In a population of 500 plants,

Phenotype	Genotype	Number
Tall	TT	232
Tall	Tt	223
Short	tt	45

Calculate the allelic frequencies  $f(T)$  and  $f(t)$

(50 marks)

[End of Section II]