

Faculty of Animal Science & Export Agriculture  
 Uva Wellassa University of Sri Lanka  
 BSc Degree Programme  
 BSc in Aquatic Resources Technology Degree Programme  
 Year I Semester II

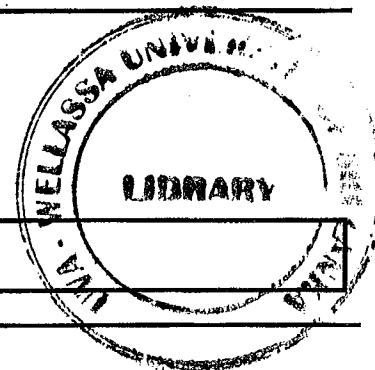


End Semester Examination – September/ October 2012  
 ANS 101-2 Principles of Genetics and Breeding- Essay (Section II)

**Instructions**

Answer all questions in Section II in booklets provided.

- No. of questions : Two (02)  
 No. of pages : Two (02)  
 Time : Sixty minutes (60 min)  
 Total marks allocated : 60%



Index No:

- 1)  
 a) Define Linkage. (10 marks)  
 b) Singed bristles (s), crossveinless wings (c) and vermilion eye colour (v) are due to recessive mutant alleles of three (03) X- Linked genes in *Drosophila melanogaster*. When a female heterozygous for all three genes was testcrossed, the following progeny were obtained. Locate the three genes (s, c and v) on the chromosome and indicate the genetic map distances.

(50 marks)

Gene combinations			Observations
s	c	v	3
c	v	+	392
v	+	+	34
c	+	+	61
s	c	+	32
s	v	+	65
s	+	+	410
+	+	+	3

c) Briefly explain the following giving examples.

- i. Codominance gene action
- ii. Direct relationship

(20 x 2= 40 marks)

2)

a) Why breeding is important to improve productivity of Animal/fish population.

(50 marks)

b)

i. Define Quantitative traits.

(10 marks)

ii. Differentiate Quantitative characters from Qualitative characters.

(40 marks)

[End of Section II]