

THE OPEN UNIVERSITY OF SRI LANKA
FOUNDATION PROGRAMME IN SCIENCE -2008/2009- LEVEL 2
OPEN BOOK TEST II
COURE CODE- PSF 2306
DATE 13TH MARCH 2009

TIME- 11.00 AM- 12.00 NN

REGISTRATION NO:

PART B

2) Colour of guinea pigs is determined by two alleles located in homozygous chromosomes. Black (B) colour is dominated by white colour (b). When a black coloured guinea pig is crossed with a white colour guinea pig all the F1 generation appeared to be grey colour.

2.1). Determine the genotypes of parent guinea pigs?

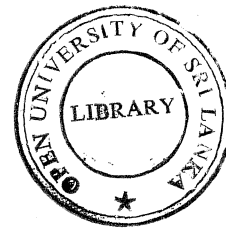
2.2). Determine the genotype of F1 guinea pig?

2.3). If this cross follows the Mendel's laws, predict the phenotype of F1 offspring?

2.4) Explain why all the F1 offspring became grey coloured?

2.5). What is the name of this condition?

2.6). What would be the result of crossing two grey coloured F1 offspring? Draw the cross and calculate the ratios of each genotype and phenotype?



2.7). The gene (B) is found to be linked with two other genes known as C and A on the same chromosome. The cross over values of these gene are given as follows,

A and B= 10

B and C = 12

A and C= 2

Map the location of the three genes on this chromosome.
