

THE OPEN UNIVERSITY OF SRI LANKA

FOUNDATION PROGRAMME - 2008/2009

PSF 2305/PSE 2305 – BOTANY II

ASSESSMENT TEST II (NO BOOK TEST)

DURATION: ONE (01) HOUR

REGISTRATION NO:



DATE: 11th February 2009

TIME: 1.00 p.m. - 2.00 p.m.

ANSWER ALL QUESTIONS ON THE SPACE PROVIDED

Total No. of questions - 02

Total No. of pages - 03

(01) The following progeny is the F₂ generation obtained from a cross between two plants from the same species where flower colour is determined by a single pair of alleles.

Plants with purple flowers - 82

Plants with white flowers - 36

Plants with red flowers - 38



(i) (a) What is the genotypic ratio of the above progeny?

.....

(b) Does this ratio agree with a Mendelian ratio?

.....

(c) Explain the results given above

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.....

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(ii) (a) What are the phenotypes and the genotypes of the parents of the F₁ generation?

Phenotype

Genotype

.....

.....

.....

.....

(b) Write the genotypes of the following plants.

Plants with purple flowers

.....

Plants with red flowers

.....

Plants with white flowers

.....

(c) What is/are the expected phenotype/s of the following cross?

Plants with red flowers X Plants with white flowers

.....

Plants with purple flowers X Plants with white flowers

.....

Plants with red flowers X Plants with purple flowers

.....

(d) Indicate the genotypes and genotypic ratios of the progeny of the cross (c) above

(i)

(ii)

(iii)

(02) Define the following terms.

a) Test cross

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b) Gene linkage

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c) Allels

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d). Dihybrid cross

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e). Dominant trait

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