

U.G. 5th Semester Examination - 2020

BOTANY

[HONOURS]

Discipline Specific Elective (DSE)

Course Code : BOTH-DSE-P-02/PR

[PRACTICAL]

(Plant Breeding and Biometry)

Full Marks : 20

Time : 2 Hours

The figures in the right-hand margin indicate marks.

1. Answer any **one** of the following:

- a) In a F₂ population of ragi, the breeder observed 603 plants with grey coloured seeds and 217 plants with red coloured seeds. Perform a suitable statistical analysis and determine whether this proportion of plants is in agreement with Mendel's ratio or not?

5+2=7

(The chi square value for 1 d.f. at 5% level is 3.84)

- b) Perform a suitable statistical test on the data of F₂ generation of crosses between tall and dwarf peas.

Number of plants in F ₂	
Tall	Dwarf
780	220

Test the hypothesis at 5% level and comment on the nature of inheritance. 5+2=7

The chi square value for 1 d.f. at 5% level is 3.84.

- c) In a F₂ population of sweet pea, the breeder observed 570 plants with purple coloured flowers and 420 plants with white coloured flowers. Perform a suitable statistical analysis and comment on the inheritance pattern of genes. 5+2=7

(The chi square value for 1 d.f. at 5% level is 3.84)

2. Answer the following questions. 1×3=3

- a) What is null hypothesis?
 b) Define degree of freedom.
 c) Mention two applications of chi square test in plant breeding.

3. Laboratory records. 5

4. Viva voce. 5

[Turn over]