

U.G. 6th Semester Examination - 2021**BOTANY****[HONOURS]****Course Code : BOT-H-CC-P-13/PR****(Genetics)****[PRACTICAL]**

Full Marks : 20

Time : 2 Hours

*The figures in the right-hand margin indicate marks.*1. Answer any **one** of the following questions: 7

- i) A cross between purple flowered and white flowered sweet pea varieties results in F1 plants with all purple flowers. In F2 generation, 53 plants have purple flowers and 43 with white flowers. (a) Perform a suitable statistical test to determine the phenotypic ratio of F2 generation. (b) What type of gene interaction is involved? 5+2

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

OR

- ii) In garden pea, yellow cotyledon color is dominant over green, and inflated pod shape is

dominant over the constricted form. In F2 generation, the progeny appeared in the following numbers:

Green, Inflated- 193

Yellow, Constricted- 184

Yellow, Inflated- 556

Green, Constricted- 61

Do these genes assort independently? Support your answer using a suitable statistical analysis.

(Table chi-square value for 3 d.f. at 5% level is 7.81). 7

2. Identify with reasons: $1\frac{1}{2} + 1\frac{1}{2} = 3$ 

Specimen (A)



Specimen (B)

3. Laboratory Note Book 5

4. Viva Voce 5

[Turn over]