

U.G. 5th Semester Examination-2022**BOTANY****[HONOURS]****Discipline Specific Elective (DSE)****Course Code : BOTH-DSE-T-02B****(Plant Breeding and Biometry)****Full Marks : 40****Time : 2½ Hours***The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any five of the following: 2×5=10
- a) What is domestication?
 - b) Define apomixis.
 - c) What is inbreeding depression?
 - d) What is polygenic inheritance?
 - e) Why marker assisted selection is important in plant breeding?
 - f) What do you mean by positive correlation?
 - g) What is the role of IBPGR?
 - h) Calculate the coefficient of variation if given value of standard deviation 1.25 and arithmetic mean is 7.

[Turn over]

2. Answer any two the following: $5 \times 2 = 10$

a) What is pureline selection? Schematically represent its procedure. $1 + 4 = 5$

b) Describe the general techniques of hybridization.

c) Briefly describe the method of introducing the new plant in a new area.

d) Make a pie diagram with the following data of a hybridization experiment of F_2 seeds.

Yellow and smooth seed 75

Yellow and wrinkled seed 20

Green and smooth seed 25

Green and wrinkled seed 10

3. Answer any two of the following: $10 \times 2 = 20$

a) Give a comparative account of pedigree method and bulk method of plant breeding. Enumerate the achievements and demerits of both the methods.

$7 + 3 = 10$

b) Describe the different modes of reproduction of crop plants for generating the variations. 10

c) What are the recent techniques adopted for crop improvement in short duration? 10

d) In an experiment yield of pods/plant in *indigofera* plant shows the following data. Calculate the arithmetic mean and standard deviation.

$5 + 5 = 10$

No of pods x	12	10	11	13	15	08	14	07	06	09	11
Frequency f	3	5	7	2	4	2	3	2	4	5	2