

B.Sc. (Semester – VI) Examination, April/May 2019
BOTANY (Paper – XIV)
Genetics, Plant Breeding and Statistical Methods

Duration : 2 Hours

Total Marks : 80

Instructions : i) **All** questions are **compulsory**, however **internal choice** is available.

ii) Answer sub-questions in Question 1 and Question 2, briefly.

iii) Figures to the **right** indicate **maximum** marks to the questions.

iv) **Draw** labelled diagrams **wherever** necessary.

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

16

a) Describe the attached X method of detecting mutations.

b) What are the effects of deletions ?

c) What are the uses of monoploids ?

d) Distinguish between :

i) Double monosomics and nullisomics.

ii) Primary trisomics and secondary trisomics.

e) What are the characteristics of a pure line ?

f) Describe any two random sampling techniques.

2. Write short notes on **any four** of the following :

16

i) Frame shift mutations.

ii) Single inversions.

iii) *Raphanobrassica*.

iv) Emasculation.

v) Complex crosses in plant breeding.

vi) Scatter diagram.

3. A) Explain the action of base analogues in mutation.

6

OR

A) Explain how tautomerization can lead to copy error mutations.

6

B) What are the different types of duplications ?

6

P.T.O.



4. A) Describe meiosis in reciprocal translocation heterozygote. 6
OR
A) Discuss how triploidy can lead to seedlessness. 6
B) What is aneuploidy ? Discuss non disjunction as a cause of aneuploidy. 6
5. A) Briefly describe the pedigree method of plant breeding. 6
OR
A) What is mutation breeding ? Briefly discuss the applications of mutation breeding. 6
B) Discuss the merits and demerits of mass selection. 6
6. A) Write a note on the measures of central tendency. 6
OR
A) Describe histograms and write its uses. 6
B) Differentiate between correlation and regression. 6