

**CITY COLLEGE EXAMINATION CENTRE**  
**B.Sc. (Hons.) Semester- IV Examination, 2020**  
According to Calcutta University Botany Hons.  
(CBCS) Syllabus

**Subject : BOTANY**  
Paper : **SEC B** ( Plant Breeding )  
Time : 4 hours

**Group- A ( Internal assessment )**

Full marks : **10** ( *Answer any one of the following questions* ).

**1 \* 10 = 10**

Write notes on :

1. Biochemical or protein markers
2. Maintenance of germplasm
3. Differences between inbreeding and outbreeding
4. Differences between mass selection and pure line selection

**Group – B ( Theory )**

Full marks : **40** ( *Answer any two questions* ) (**2\*20 = 40**)

1. What is mutation breeding? Discuss the objectives, advantages and disadvantages of mutation breeding. 4+4+8+4
2. Define male sterility. What is the importance of genetic male sterility in plant breeding? How does cytoplasmic male sterile line can be maintained? 2+6+12
3. a) What are the achievements of plant breeding in production efficiency and height of crop plants?  
b) What are the different features of molecular markers? Name the different molecular markers are in use for plant breeding. 10+10
4. Define heterosis. Mention the effects of heterosis. What are the causes of heterosis? 2+6+12
5. Write down the effects of inbreeding in plant population? What could be the degrees of inbreeding depression? 12+8