

**C 1112**

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Name.....

Reg. No.....

**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION, MARCH 2021**

Botany

**BOT 6B 15—GENETICS AND CROP IMPROVEMENT**

Time : Three Hours

Maximum : 80 Marks

**Section A**

*Answer all questions.*

*Each question carries 1 mark.*

1. A saline resistant variety of Rice.
2. Expand CIMMYT.
3. Centre of origin of Arecanut.
4. A bacterial biofertilizer.
5. A chemical mutagen.
6. Define germplasm.
7. A developed variety of Pepper.
8. What is emasculation ?
9. Define antibiosis.
10. A method to escape drought.

(10 × 1 = 10 marks)

**Section B**

*Answer at least five questions.*

*Each question carries 4 marks.*

*All questions can be attended.*

*Overall Ceiling 20.*

11. Mention two types of abiotic stress in plants.
12. Distinguish between euploidy and polyploidy.
13. What is a back cross ? How is it important ?
14. List out two research activities of TBGRI.
15. Explain salt tolerance.
16. What is vertical resistance ? How does it differ from horizontal resistance ?
17. What is the significance of programmed environments ?

**Turn over**

18. Expand HSP. How do they provide resistance in plants to adverse conditions ?
19. Name the product of *nif* gene. Why is it significant ?
20. Describe the floral morphology of Cashew.

(5 × 4 = 20 marks)

### Section C

*Answer at least five questions.  
Each question carries 7 marks.  
All questions can be attended.  
Overall Ceiling 35.*

21. Elaborate on the research activities of NBPGR.
22. With examples, analyze selection as a method of crop improvement.
23. Explain the role of haploids in breeding techniques and crop improvement.
24. What is the genetics and the sources for mineral deficiency resistance.
25. Mention the characteristics of salt affected soils. How are they managed ?
26. Give an account on the difficulties encountered in breeding for insect resistance.
27. Discuss the sources of chilling tolerance in plants.
28. Write a note on the genetics underlying photosynthesis.

(5 × 7 = 35 marks)

### Section D

*Answer at least one question.  
The question carries 15 marks.*

29. Discuss the methods adopted by plants to develop disease resistance. What are the breeding methods that can be implemented to develop disease resistance ?
30. What is hybridization ? With examples, enumerate the different types and explain the steps involved in the process.
31. Describe mutation as a means of crop improvement. Enlist the achievements and future prospects.

(1 × 15 = 15 marks)