

C 20086

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Name.....

Reg. No.....

**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION  
MARCH 2022**

Botany

BOT 6B 09—GENETICS AND PLANT BREEDING

(2014 to 2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

**Section A**

*Answer all questions.  
Each question carries 1 mark.*

1. What is clonal selection ?
2. Who is known as the father of green revolution in India.
3. What is linkage group ?
4. Give an example for polygenic inheritance.
5. What is meant by back cross ?
6. Give an example for lethal gene in humans.
7. Name a disease caused due to trisomy of chromosome 21.
8. Give an example for improved variety produced by hybridization.
9. What is meant by acclimatization ?
10. Give the ratio of dominant epistasis.

(10 × 1 = 10 marks)

**Section B**

*Answer all questions.  
Each question carries 2 marks.*

11. What are the advantages of pure line selection ?
12. Enumerate the objectives of hybridization.
13. What is co-dominance ?
14. State law of independent assortment.

**Turn over**

15. Write a short note on Turner's syndrome.
16. Differentiate between complete and incomplete linkage.
17. What is extra nuclear inheritance ?
18. Define mutation breeding.
19. What is coincidence ?
20. Differentiate between gene frequency and genotypic frequency.

(10 × 2 = 20 marks)

### Section C

*Answer any **six** questions.*

*Each question carries 5 marks.*

21. Explain recessive epistasis with an example.
22. What is clonal selection ? What are its advantages ?
23. Explain self sterility in *Nicotiana*.
24. What is meant by X-linked inheritance ? Explain.
25. Write a note on polyploidy breeding.
26. Explain incomplete dominance with an example.
27. How is genetic engineering helpful in plant breeding ?
28. Define hybrid vigour. How is it useful to farmers ?

(6 × 5 = 30 marks)

### Section D

*Answer any **two** questions.*

*Each question carries 10 marks.*

29. With the help of an example, explain polygenic inheritance.
30. Explain the different mechanisms of sex determination with examples.
31. What is the significance of mutation in plant breeding ? Explain with suitable example.

(2 × 10 = 20 marks)