

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

Botany

BOT 6B 09—GENETICS AND PLANT BREEDING

Time : Three Hours

Maximum : 80 Marks

Section A

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

1. Hybrid vigour is also called _____.
2. Give an example for improved variety produced by polyploidy breeding.
3. The alternate form of the same gene is called _____.
4. Give the phenotypic ratio of complementary gene interaction.
5. Crossing F1 with either of the parent is known as _____.
6. The proportion different genes in a population is called _____.
7. Crisscross inheritance is characteristic of _____.
8. The external appearance of an organism is called _____.
9. Name an introduced plant.
10. Give an example for maternal influence.

(10 × 1 = 10 marks)

Section B (Short Answer Questions)

*Answer at least five questions.**Each question carries 4 marks.**All questions can be attended.**Overall Ceiling 20.*

11. What is mutation breeding ?
12. Define Karyotype.
13. What are quarantine regulations ?
14. State law of purity of gametes.

Turn over

15. What are lethal genes ? Give an example.
16. Define crossing over. What is its significance ?
17. What are holandric genes ?
18. Define Clone.
19. What is criss-cross inheritance ?
20. Describe Turner's syndrome.

(5 × 4 = 20 m)

Section C (Short Essay)

Answer at least five questions.

Each question carries 7 marks.

All questions can be attended.

Overall Ceiling 35.

21. Explain Complementary gene interaction with an example.
22. Describe general technique and steps involved in hybridization programme.
23. State law of independent assortment ; explain the same with an example.
24. Discuss genic balance theory.
25. Explain the inheritance pattern of ABO blood group in man.
26. Write a note on extra nuclear inheritance.
27. What are the objectives of plant breeding ?
28. Describe co-dominance with an example.

(5 × 7 = 35 m)

Section D (Essay)

Answer at least one question.

Each question carries 15 marks.

29. What are multiple alleles ? Explain with self sterility in *Nicotiana*, as an example.
30. Compare mass selection and pure line selection. Point out the merits and demerits of both processes.
31. What is epistasis ? Explain dominant and recessive epistasis with examples.

(1 × 15 = 15 m)