C 20532   (Pages : 2)   Name..

Reg. No....................................

SIXTH SEMESTER U.G. DEGREE EXAMINATION, MARCH 2022

(CBCSS–UG)

Botany

BOT 6B 10—GENETICS AND PLANT BREEDING

(2019 Admissions)

Time : Two Hours   Maximum : 60 Marks

Section A

Answer atleast **eight** *questions.*
Each question carries 3 *marks.*
All questions can be attended.
Overall ceiling 24.

1. Define genotype and phenotype.

2. What is recessive epistasis ?

3. Define laws of inheritance.

4. Define plant breeding. Briefly describe various objectives of plant breeding.

5. Write a short note on clonal selection.

6. What is mutagen and differentiate physical and chemical mutagen ?

7. What is pure line selection ?

8. Explain Hardy-Weinberg Law and factors affecting it.

9. Explain genetic basis of heterosis.

10. Define lethal genes.

11. What is incomplete dominance ?

12. Explain Polygenic Inheritance with suitable examples.

$(8 \times 3 = 24 \text{ marks})$

Turn over

Section B

Answer atleast **five** *questions.*
Each question carries 5 marks.
All questions can be attended.
Overall ceiling 25.

13. Explain multiple allelic inheritance and its significance.

14. Give an account of three-point test cross method of gene mapping.

15. Illustrate sex linked inheritance with a suitable example.

16. Elaborate Linkage and Crossing Over.

17. Explain the genetics of inheritance of coat colour in mice.

18. Briefly describe the procedures of mutation breeding.

19. Explain polyploidy breeding with suitable examples.

$(5 \times 5 = 25$ marks)

Section C

Answer any **one** *question.*
Each question carries 11 marks.

20. Illustrate multiple alleles with ABO blood group as an example. A woman homozygous for blood type B marries a man who is heterozygous for blood type A. State the possible phenotypic ratio of the offspring.

21. With suitable examples elaborate various types of plant hybridisation procedures.

$(1 \times 11 = 11$ marks)