D 40076 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH/APRIL 2018

(CUCBCSS—UG)

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. Define Heterosis.
2. Name two popularly used improved varieties of Rice.
3. What are cryoproteins ?
4. Name a fungal biofertilizer.
5. Where is KFRI located ?
6. Name a gene that imparts insect resistance.
7. A parasitic weed.
8. Expand ICRISAT.
9. What is acclimatization ?
10. A chemical mutagen.

(10 × 1 = 10 marks)

Section B

Answer **all** *questions.*

Each question carries 2 *marks.*

11. Write a note on the origin of Pepper.
12. Expand NBPGR and add a note on its activities.
13. What is pureline selection ?
14. What is the significance of haploids in plant breeding technique ?
15. What are *nif* genes ?

Turn over

16. Differentiate between vertical and horizontal resistance.

17. What are the causes of abiotic stress in plants ?

18. What are the breeding techniques employed in Coconut ?

19. Describe the methods of managing salt affected soils.

20. What are heat shock proteins ?

(10 × 2 = 20 marks)

Section C

Answer any **six** *questions.*
Each question carries 5 *marks.*

21. Give an account on the location, research activities and achievements of CCMB.

22. Explain the advantages and disadvantages of inbreeding.

23. What are the breeding methods adopted for drought resistance in plants ?

24. Describe the genetics of chilling tolerance.

25. What are the methods adopted by plants for disease resistance ?

26. Give an account on mutation breeding. What are its achievements and prospects ?

27. What are biofertilizers ? What are its advantages ?

28. Distinguish between oligogenic and polygenic inheritance of disease resistance.

(6 × 5 = 30 marks)

Section D

Answer any **two** *questions.*
Each question carries 10 *marks.*

29. Explain the different types of hybridization and the steps involved in the process.

30. Describe the techniques involved in breeding for salinity resistance with emphasis on the problems encountered in the process.

31. Give an account on the mechanism and genetics of insect resistance in plants. Outline the breeding methods that can be adopted for insect resistance.

(2 × 10 = 20 marks)