

TB145110A

Reg. No.....

Name.....

B. Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2016
SEMESTER V - CORE COURSE (BOTANY)
BOT5GPH - GENETICS, PLANT BREEDING AND HORTICULTURE

Time: Three Hours

Maximum Marks: 60

PART A

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

1. What is a test cross?
2. Define multiple allelism
3. What are holandric genes?
4. Give any two factors which can alter gene and genotypic frequency.
5. What is meant by acclimatization?
6. What is meant by apomixis?
7. What is a scion?
8. What is a Bonsai?

(8x1=8)

PART B

II. Answer any six questions. Each question carries 2 marks.

9. What are complementary genes? Explain it with the help of an example.
10. Briefly explain gametophytic self-sterility in *Nicotiana* plant.
11. Write a short note on inheritance of ear size in *Maize*.
12. Explain crossing over? Write any two significance of crossing over.
13. Mention any four objectives of plant breeding.
14. What are purelines? Mention the advantages of pureline selection.
15. Write a short note on Gamma garden.
16. What is meant by drip irrigation? Mention its advantages.
17. Explain seed viability and seed dormancy.
18. Distinguish between training and pruning.

(6x2=12)

PART C

III. Answer any four of the following. Each question carries 4 marks.

19. State the three basic laws of inheritance. Write down the typical Mendelian monohybrid and dihybrid phenotypic ratios.
20. Illustrate the mechanism of criss-cross inheritance of characters in human beings with an example.
21. Write a short note on the inheritance of Kappa particle in *Paramecium*.
22. What is meant by quarantine? Explain the important regulations in connection with quarantine of plant introduction.
23. Define emasculation? Explain the aim and the different methods adopted for emasculation.

24. Explain any two methods of budding in plants. **(4x4=16)**

PART D

IV. Answer any two of the following. Each question carries 12 marks.

25. What is the mechanism involved in the inheritance of coat colour in mice and fruit colour in summer squash. How is the Mendelian ratio modified in them?
26. Explain the XX-XY and XX-XO mechanism of sex determination. Describe any two syndromes associated with sex chromosomes in humans.
27. Write an essay on plant introduction mentioning its procedure and achievements.
28. Write an essay on different garden components.

(2x12=24)