Exam. Code : 210003
Subject Code : 5398

M.Sc. Botany 3rd Semester

PLANT BREEDING & IPR

Paper—BOT-C-614

Time Allowed—3 Hours] [Maximum Marks—50

SECTION—A

Note :— Attempt ***all*** the questions carrying **1** mark each. Limit your answers up to ***four*** lines. (8×1=8)

1. Differentiate primary plant introduction from secondary introduction.
2. Define inbreeding depression.
3. What is pedigree selection ?
4. Define genetic advance.
5. Why the knowledge about origin of crop is important to plant breeder ?
6. Define domestication and discuss how it is similar to evolution.
7. What is a male gametocide ? Give one example.
8. What do you mean by path analysis ?

SECTION—B

Note :— Attempt any ***seven*** questions. Each question carries **3** marks. Limit your answers to ***two*** pages.

(7×3=21)

9. Discuss primary, secondary and tertiary gene pools and their utility in breeding.
10. Define purelines. Describe salient features of purelines.
11. Discuss genetics basis of heterosis.
12. Discuss the methods of estimating heritability of a trait.
13. Explain what a patent is, discuss the types of patents and what can be patented.
14. Explain transgenic male sterility. Give its merits and demerits.
15. How can heterosis be fixed by using phenomenon of apomixis ? Give examples.
16. Give an account of system of mating with emphasis on random mating system.
17. Discuss the application of multivariate analysis in plant breeding.
18. Disadvantages of induced mutagenesis for breeding vegetatively propagated crops.

SECTION—C

Note :— Attempt any ***three*** questions. Each question carries **7** marks. Limit your answers to ***four*** pages.

(3×7=21)

19. What is Plant Introduction ? What are different purposes of plant introduction ? Give brief account of various organizations associated with plant introduction work.

20. What is self-incompatibility ? Describe its different types. Discuss plant breeding implications of self-incompatibility.

21. Give an account of breeding methods for disease resistance. Discuss the types of genetic host resistance and their breeding approaches.

22. What are wide crosses ? Discuss the various challenges and their solutions of this type of hybridization. Give three specific reasons why wide crosses may be undertaken.

23. With the help of suitable examples discuss the role of autoploidy and alloploidy in plant improvement.