

2025

M.Sc. in Agriculture
1st Semester Examination



GENETICS AND PLANT BREEDING

Paper : GPB-504

(Varietal Development and Maintenance Breeding)

Full Marks : 70

Time : Two Hours

The figures in the margin indicate full marks.

*Candidates are required to give their answers
in their own words as far as practicable.*

Group - A

Answer any *five* questions : $2 \times 5 = 10$

- ✓ 1. Define orthodox and recalcitrant seed.
2. What is an essentially derived variety (EDV)?
- ✓ 3. What is an obsolete variety?
4. Differentiate between grain and seed.
5. What is the real value of seed?
6. Explain detasseling.

P.T.O.

2

(2)

7. Explain the peroxidase test of seed.
8. Define carry-over seed.



Group - B

Answer any *four* questions : 5×4=20

9. Write a short note on seed certification procedure.
10. Briefly explain Plant Breeder's Rights (PPBR).
11. Write down the different methods of varietal purity analysis.
12. Write a short note on DUS test and VCU test.
13. What are the general principles of seed crop inspection?
14. What is seed dormancy? Explain different methods for breaking seed dormancy. 1+4

Group - C

Answer any *two* questions : 10×2=20

15. Briefly explain the different classes of improved seed.
16. Discuss the certified seed production of (i) double cross hybrid maize and (ii) hybrid sorghum. 5+5
17. Mention the concept of genetic purity and describe the role of maintenance breeding in ensuring genetic purity. State the factors responsible for genetic deterioration of varieties. 2+4+4

(3)

18. Briefly mention the salient features of the Seed Act. Discuss the role of following implementation of the Seeds Act : 2+8=10

- (i) Central seed testing laboratory
- (ii) Seed certification agency
- (iii) Central seed committee
- (iv) Seed Inspector.

Internal Assessment : 20 marks

