



K24P 0266

Reg. No. :

Name :

**IV Semester M.Sc. Degree (C.B.S.S. – Reg./Supple. – (One Time Mercy
Chance)/Imp.) Examination, April 2024
(2014 Admission Onwards)
BOTANY
BOT4 E08 : Crop Improvement**

Time : 3 Hours

Max. Marks : 60

I. Answer **any two** of the following :

- 1) Describe a detailed account on the methods of breeding for disease resistance in crops. Add a note on the advantages of resistance breeding.
- 2) Discuss the major prerequisites for a successful hybrid breeding programme - 373.
- 3) Write an essay on biotechnological approaches in crop improvement programmes.
- 4) Enumerate the various breeding methods adopted for clonally propagated crop plants. (2×8=16)

II. Answer **any two** of the following :

- 5) Explain various hybridization methods available for breeding better crop varieties.
- 6) How does plant breeding help for crop productivity with special reference to Indian sub-continent ?
- 7) Critically discuss the advantages and disadvantages of mutation breeding. (2×6=12)

III. Answer **any six** of the following :

- 8) What are the basic requirements for a transgenic crop development ?
- 9) Discuss allopolyploidy and its roles in the improvement of crop varieties.
- 10) Define hybrid vigour. How is it useful to farmers ?

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- 11) What is a clone ? Describe the clonal propagation methods practiced in rubber.
- 12) What is the importance of selection in plant breeding ? Differentiate between natural and artificial selection.
- 13) Discuss the role of micro propagation in crop improvement.
- 14) Differentiate interspecific hybridization from intra specific hybridization with relevant examples.
- 15) What is self incompatibility ? How can it be used in plant breeding ? (6×3=18)

IV. Answer **any seven** of the following :

- 16) Differentiate vertical resistance from horizontal resistance.
- 17) Briefly explain the role of chemical mutagens in crop improvement.
- 18) What is meant by terminator seed technology ? Give one example for such seeds.
- 19) Define clonal selection. Mention any two advantages of it.
- 20) What are Gamma gardens ? Name any one institute where this facility is available in India.
- 21) Mention any two application of euploidy in crop improvement.
- 22) Define heterosis breeding.
- 23) Name any two cereal crop varieties produced through mutation breeding.
- 24) Comment on the role of genetic variability in plant breeding.
- 25) Briefly explain the importance of certified seeds. (7×2=14)