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Total No. of Pages : 02

Total No. of Questions : 08

**B.Sc. (Agriculture) / B.Sc. Honours (Agriculture) (Sem.-5)**

**INTRODUCTION OF PLANT BREEDING**

**Subject Code : BSAG-507**

**M.Code : 74171**

**Date of Examination : 03-08-21**

**Time : 2 Hrs.**

**Max. Marks : 60**

**INSTRUCTIONS TO CANDIDATES :**

**1. Attempt any FIVE question(s), each question carries 12 marks.**

1. What is hybridization and its types? Discuss in detail the pedigree method of handling the segregating generations along with its merits. Also mention any one of its modification in detail.
2. What is heterosis? How is it different in its expression in self pollinated and cross pollinated crops? State overdominance hypothesis of heterosis.
3. a) What is inbreeding depression and its genetic causes. How is it different from heterosis?  
b) What is ploidy breeding? State few successful examples where ploidy breeding has been exploited to develop commercial varieties.
4. What is male sterility? List the various types of male sterility systems operating in plants. How we can introgress male sterility gene (dominant and recessive) using back cross method?
5. What is recurrent selection? Discuss the methodology employed for Reciprocal Recurrent Selection (RRS) and also mention their merits and demerits. Give comparative description of RRS and Simple RS methods.
6. a) What is domestication and what changes occurred due to domestication. List various centres of origin proposed by N.I Vavilov  
b) What is apomixis? Apomixis can be beneficial as well as nuisance to a plant breeder, justify with suitable example.

7. Write short notes on :
- a) Adventive embryony and polyembryony
  - b) Chiasmogamy and cleistogamy
  - c) Clone and somaclone
  - d) Tripping in clover/Lucerne
8. a) Define mutations. Differentiate between natural and induced mutations. What are the characteristics of mutations and their role in plant breeding?
- b) Describe Johannsen's pure line theory and its genetic basis.

**Note: Any student found attempting answer sheet from any other person(s), using incriminating material or involved in any wrong activity reported by evaluator shall be treated under UMC provisions.**

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**Any student found making any change/addition/modification in contents of scanned copy of answer sheet and original answer sheet, shall be covered under UMC provisions.**