

Enrollment No.....



Faculty of Agriculture
End Sem Examination Dec-2023

AG3CO17 Fundamentals of Plant Breeding

Programme: B.Sc. (Hons.) Branch/Specialisation: Agriculture

Duration: 3 Hrs.**Maximum Marks: 50**

Note: All questions are compulsory. Internal choices, if any, are indicated. Answers of Q.1 (MCQs) should be written in full instead of only a, b, c or d. Assume suitable data if necessary. Notations and symbols have their usual meaning.

- Q.1 i. Based on modes of pollination, plant species can be categorised into- **1**
 (a) Self-pollinated (b) Cross-pollinated
 (c) Often cross pollinated (d) All of these
- ii. The quickest method of plant breeding is- **1**
 (a) Introduction (b) Hybridisation
 (c) Selection (d) Mutation breeding
- iii. Somatic hybridisation is achieved through- **1**
 (a) Grafting (b) Conjugation
 (c) Protoplast fusion (d) Recombinant DNA- technique
- iv. Bagging is done to avoid- **1**
 (a) Cross pollination (b) Self pollination
 (c) Both (a) & (b) (d) None of these
- v. Green revolution in India occurred during- **1**
 (a) 1950 (b) 1960 (c) 1970 (d) 1980
- vi. Triticale is developed through cross between- **1**
 (a) Wheat and Rye (b) Maize and Rice
 (c) Wheat and Rice (d) Wheat and Barley
- vii. The process of bringing wild species into human management is known as- **1**
 (a) Domestication (b) Hybridisation
 (c) Selection (d) Acclimatization
- viii. Mass selection method is basically applied for the improvement of- **1**
 (a) Self pollinated crops
 (b) Cross pollinated crops
 (c) Often cross pollinated crops
 (d) Mutation breeding

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- ix. Based on abundance of crop species, centre of origin can be classified into- **1**
 (a) Primary centre (b) Secondary centre
 (c) Micro-centre (d) All of these
- x. The method of population selection based on their phenotype- **1**
 (a) Mass selection (b) Pure line selection
 (c) Backcross method (d) Mutation breeding
- Q.2 i. Write the definition of plant breeding. **2**
 ii. Describe chief objectives and scope of plant breeding. **6**
 OR iii. Define pollination and explain modes of pollination. **6**
- Q.3 i. Enlist different methods of breeding self pollinated crops. **2**
 ii. Explain in detail about pure line theory. **6**
 OR iii. Distinguish between mass and pure line selection. **6**
- Q.4 i. Briefly describe cross pollination, self pollination and often cross pollination. **2**
 ii. Describe briefly the mechanism promoting self and cross pollination. **6**
 OR iii. Define mutation. List the different mutagens along with examples. **6**
- Q.5 i. What is male Sterility? Give its types. **2**
 ii. Distinguish between pedigree and bulk method. **6**
 OR iii. Define Heterosis and explain different types of Heterosis. **6**
- Q.6 Write a short note any two:
 i. (a) Hybridisation and types of Hybridisation **4**
 (b) Hardy Weinberg law
 ii. (a) Intellectual property and Intellectual property rights **4**
 (b) Patents and Copyrights
 iii. (a) Broad sense and Narrow sense heritability **4**
 (b) Self Incompatibility and Male Sterility
