

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO

KAVERI'S IAS TEST SERIES

UPSC TEXT BOOKLET: GENERAL STUDIES

ANSWER WRITING PRACTICE CHALLENGE BOTANY

TEST: PLANT BREEDING

Time Allowed: 3hr

Maximum Marks: 250

- ✓ Most Efficient for Self preparing students.
- ✓ More chance to clear all the three stages of UPSC Exam.
- ✓ Best for hardworking students
- ✓ One can complete the Pre & mains Syllabus at micro level on every day basis.
- ✓ You deserve to achieve your dream with this Programme.

Marks Allocation Parameters

- ✓ Scope & relevance – 50%
- ✓ Illustration with examples – 20%
- ✓ Organization – 10 %
- ✓ Alignment of Presentation – 10%
- ✓ Hand writing – 5 %
- ✓ Conclusion – 5 %

INSTRUCTIONS

1. Immediately after the commencement of the examination, you should check that this test booklet does not have any unprinted or torn or missing pages of items etc. if so, get it replaced by a complete test booklet.
2. There will be penalty (negative making) for wrong answers marked by a candidate. For each wrong answer, one-third of a mark will be deducted as penalty. 3. Be word limits for subject wise Questions

All the Questions are compulsory!

1. Answer the following in not more than 100 words, each questions carry 5 marks.

- A. Genetic / physiological basis of inbreeding depression and heterosis.
- B. Synthetic and composite methods of variety development.
- C. Backcross method of breeding
- D. Where are CMS genes located and causes for CMS in plants?
- E. Colchicopolydiploids.
- F. Pure line selection
- G. Self-pollination Versus Cross-pollination
- H. Conventional Breeding Versus Modern Breeding methods
- I. Pedigree method of breeding
- J. Discuss the mechanism of diseases resistance?

2.

- A. What you meant by Plant breeding? Discuss why breeding is required in crop improvement? Specify the important activities / methods that are involved in, for bringing variation in crop plants. 15 marks.
- B. Describe the methods of selection and hybridization used in plant breeding. 15 marks.
- C. Define Mutation breeding? Describe the procedure for mutant varieties development? Discuss the types of mutagenesis that involved for creation of desirable traits in crop plant. 20 marks.

3.

- A. What is meant by Heterosis breeding? How it's fixed in plants & factors affecting such mechanism? Discuss physiological basis of heterosis in plant? 15 marks.
- B. What you mean Self Incompatibility? Explain the mechanism that involved in Self incompatibility. Discuss the various types of Self Incompatibility. 20 Marks.
- C. What you mean by Male sterility? Discuss the features & Significance of Male sterility in Plant Breeding. 15 marks.

4.

- A. What is Apomixis? Write about its relevance in plant breeding? 15 marks.
- B. What you mean by Inbreeding? What activities can lead to inbreeding depression? How such depression can be controlled? How Inbreeding differs with outbreeding. 15 Marks.
- C. What you mean by Polyploid & Polyploidy condition? How it can be induced in crops plants? Discuss the types, application of Induced Polyploidy. 20 marks.

5. Answer the following in not more than 100 words, each questions carry 5 marks.

- A. How would you develop improved variety of basmati rice for organic farming conditions?
Discuss golden rice variety development.
- B. Types of hybrids and name the varieties that are developed in different methods of hybrids in crops.
- C. Selections of cytoplasmic - genetic male sterility (CGMS) in the development of hybrid varieties.
- D. Describe the method of developing maize hybrids?
- E. Techniques of breeding in self pollinated crops.
- F. History of Plant Breeding works in India.
- G. Spontaneous Mutation versus Induced mutation
- H. Mass selection
- I. Sib selection breeding method
- J. What you mean by Crop Pollination? Discuss the different methods for pollination for crop improvement?

Jai Hind!

KAVERI'S IAS
