

IAS Mains Agriculture 2003

Paper-II

Section A

1. Answer any THREE of the following in about 200 words each:
 - a. Define the chromosome theory of hereditary and discuss about inter chromosomal linkage.
 - b. Discuss the role of biotechnology in hybrid and improved varieties production in crops and explain the hybrid vigour.
 - c. Discuss in detail the storage pest problem of pulses and their control.
 - d. Define the host plant resistance and discuss about its importance in cropping system.
2. Answer the following questions
 - a. Describe the causal organism, life history, nature of damage and control of powdery mildew disease of grapes.
 - b. Discuss the mechanism and management of insecticidal resistance in insect pest.
 - c. Describe the breeding procedures which-are used for producing new varieties of self pollinated crops.
3. Answer the following questions
 - a. Describe the role of polyploidy in plant breeding.
 - b. Discuss the foundation and certified seed production.
 - c. Describe the causes and control of mango malformation.
4. Write notes on the following:
 - a. Osmotic pressure cell sap
 - b. Plant pigments
 - c. Pollination and Fertilization
 - d. National and International food policies

Section B

5. Answer the following questions
 - a. Define the nucleic acids and discuss their structure and functions.
 - b. Describe the cultivation of roses and its marketing.
 - c. Discuss the role of photoperiodism and vernalization.
6. Explain the following with examples:
 - a. Combining ability and its significance in plant breeding
 - b. Fruit production, processing and distribution in India

c. Marketing problems of fruits and vegetables in India

7. Comments in detail:

- a. Mass and recurrent selection
- b. Layout of lawn and garden
- c. Red rot of sugarcane

8. Write notes on

- a. Germination and dormancy
- b. The role of vegetables in human nutrition
- c. Mutant varieties