

# IAS Mains Agriculture 1999

## Paper-II

### Section A

1. Answer any three of the following in about 200 words each:
  - a. Define biotechnology. Explain about some of the recent trends in the application of biotechnology in plant protection.
  - b. Write about the phytochrome and its distribution in plants.
  - c. How are hybrid seeds produced on a commercial scale? Offer your comments on terminator seeds.
  - d. Write briefly on:
    - i. Carotenoids
    - ii. C, plants
    - iii. Glycolysis
    - iv. Osmosis and Turgor.
2. Answer the following questions
  - a. Write about the classification of enzymes based on their role and how is their action regulated.
  - b. Write about the various methods of crop improvement in plant breeding.
  - c. Explain about the causes of seed dormancy. Suggest methods of breaking seed dormancy.
3. Answer the following questions
  - a. Mention the different plant growth substances and write about the purposes for which they are utilised.
  - b. Write about the functions of various parts of the cell
  - c. How do prokaryote cell and eukaryote cell differ?
4. Write short notes on any four of the following:
  - a. Euchromatin and heterochromatin
  - b. Basmati rice
  - c. Imbibition
  - d. Apomixis
  - e. Seed quality attributes for vegetables
  - f. Autotetraploid

### Section B

- a. Write about the seed treatment chemicals which are used for the control of diseases and pests in agriculture with suitable examples.
- b. Write about the mode of action of organophosphatic insecticides. Give some examples of systemic and non-systemic insecticides.
- c. Write about the principles and methods of preservation of fruits and vegetables and their products.
- d. What precautions are taken while using toxic insecticides? Also mention the safety measures and devices.

6. Answer the following questions

- a. Write about the importance of floriculture in India. Give suggestions for development of scientific floriculture in India
- b. Mention the various insect pests of cashew with their scientific names. Write about the damage and management practices of tea mosquito in cashew orchards.
- c. Mention important diseases of potato with scientific names of their causative organisms.

Write about the symptoms of damage and control of potato blight disease.

7. Answer the following questions

- a. Write about the microbial control of American Boll worm.
- b. Write about the management practices of coconut black headed caterpillar.
- c. Write in details about the management practices of red rot and smut diseases in sugarcane.

8. Write short notes on any four of the following:

- i. Pusa bin
- ii. Granular pesticides
- iii. Control of Banana wilt
- iv. Trichoderma and Pseudomonas in disease control
- v. Ripening of fruits
- vi. Problem of food security in India