

# IAS Mains Botany 1994

## Paper-II

### Section A

1. Answer the following questions
  - a. With the help of a diagram, explain the ultra structure of the granum of chloroplast.
  - b. What is the modern concept of cell membrane?
  - c. What do you understand by genetic code?
  - d. What are the exceptions to Mendel's laws? Explain with examples
2. Discuss the numerical changes in chromosomes and their importance. How can triploids lead to seedless ness?
3. Answer the following questions
  - a. Explain various evidences for organic evolution.
  - b. Write a note on sex-linked inheritance.
4. Write a note on sex-linked inheritance.
  - i. H. G. Khorana
  - ii. Multiple alleles
  - iii. Reproductive isolation
  - iv. Agro bacterium mediated gene transfer

### Section B

5. Answer the following questions
  - a. Discuss the relationship between osmotic pressure, turgor pressure and diffusion pressure deficit in a vacuolated plant cell.
  - b. Write about the path of carbon in photosynthesis in the maize plant.
  - c. What do you know about the centre of origin of wheat and the relatives of wheat?
  - d. Write a note on the applications of plant growth regulations in agriculture.
6. Describe the chemical nature of cytokining. Discuss in detail the various physiological effects of cytokinins.
7. Answer the following questions
  - a. How are long chain fatty acids synthesized in plant cells?
  - b. What is agro forestry? What are its advantages?
8. Answer the following questions
  - a. Write critical notes on the following:

ii. Food chain and food web

b. Write the botanical name, family, plant part from which it is obtained, and uses of the following:

i. Vetiver oil

ii. Teak wood

iii. Reserpine

iv. Sesame oil