

# IAS Mains Botany 2004

## Paper-II

### Section-A

1. Write notes on any three of the following in about 200 words each: ( $20 \times 3 = 60$ )
  - a. Meiosis
  - b. Sex-linked inheritance
  - c. Mass selection
  - d. Chi-square test
2. Describe in detail the structure and functions of mitochondria (60).
3. Discuss the synthesis of nucleic acids and proteins (60).
4. Answer the following questions
  - a. Describe the back-cross method of breeding in crop varieties (30).
  - b. Describe in detail the various uses of back-cross method of breeding and its limitations (30).

### Section-B

5. Write notes on any three of the following in about 200 words each: ( $20 \times 3 = 60$ )
  - a. Photoperiodism
  - b. Seed dormancy
  - c. Social forestry
  - d. Pollution control
6. Describe the principle categories of enzymes involved in respiratory reactions (60).
7. Answer the following questions
  - a. What do you understand by mineral nutrition of crop plants (20)?
  - b. Describe the role of nitrogen, phosphorus and potash on plant growth (40).
8. Answer the following questions
  - a. What do you understand by conservation of biodiversity (20)?
  - b. How is biodiversity conserved (40)?