

IAS Mains Botany 2004

Paper-II

Section-A

1. Write notes on any three of the following in about 200 words each: (20 × 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 × 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)?