

IAS Mains Botany 2006

Paper-I

Section A

1. Answer any three of the following in not more than 200 words each: ($20 \times 3 = 60$)
 - a. What is bioremediation?
 - b. Briefly discuss the phyletic position of photobionts.
 - c. Highlight the uniqueness of the cell structure of *Anthoceros*.
 - d. What is polarity and how does it affect differentiation?
2. How do the following differ from each other: ($20 \times 3 = 60$)
 - a. Hybrid from Cybrid
 - b. Cryptogams from Archegoniates
 - c. Sporophyte from Gametophyte (in lower organisms)
3. Describe the following: ($20 \times 3 = 60$)
 - a. Molecular basis of infection
 - b. Practical application of ovule culture
 - c. Microbes as indicators of pollution
4. Draw neat and well-labelled diagrams to show: ($20 \times 3 = 60$)
 - a. Lytic cycle
 - b. Diagnostic stages of any two powdery mildews
 - c. L S sporocarp of *Marsilea*

Section B

5. Answer any three of the following in not more than 200 words each: ($20 \times 3 = 60$)
 - a. What are the symptoms and causes of hay fever?
 - b. Describe the morphological nature of commercial cotton, clove and saffron.
 - c. Describe the phyletic position of Magnoliaceae.
 - d. Citing suitable examples explain what is meant by 'form genus'
6. With the help of suitable diagrams explain: ($30 \times 2 = 60$)
 - a. Development of a bisporic embryo sac
 - b. Vavilovian centres of origin of crop plants
7. Discuss the following: (60)
 - a. Alpha and Omega taxonomy

b. Ethnobotany and its importance

c. Nemec phenomenon

8. Describe the following: ($20 \times 3 = 60$)

a. Distribution in India of the genus yielding "Taxol"

b. Phenomenon of apomixis and its importance

c. Commonalities and differences between Cyadofilicales and Cyads