IAS Mains Botany 2004

Paper-I

Section-A

- 1. Answer any three of the following (in not more than 200 words each): $(20 \times 3 = 60)$
 - a. Differentiate between bacteria and cyanobacteria.
 - b. Give an account of algae in industry.
 - c. Discuss the sequential steps involved in host pathogen interaction.
 - d. Mention the indirect uses of Bryophytes.
- 2. Write about the following: $(20 \times 3 = 60)$
 - a. Differentiate between homospory and heterospory.
 - b. Give an account of Rhynia.
 - c. Describe in detail the types of Ascocarps (Fruit bodies) in Ascomycotina and how they help

in classification.

- 3. Write critical notes on the following: $(20 \times 3 = 60)$
 - a. Sporocarp of Marsilea.
 - b. Tissue culture and its importance
 - c. Evolution of Sporophyte in Bryophytes
- 4. Write short notes on the following: $(30 \times 2 = 60)$
 - a. Mention the causal organism, symptoms and control measures of bacterial blight in paddy, sandal spike and leaf spot in groundnut.
 - b. Give the role of bacteria in fermentation and mention the products.

Section-B

5. Answer any three of the following (in not more than 200 words each): $(20 \times 3 = 60)$

- a. Give the salient features of Cordaitales.
- b. Explain the secondary growth in Pinus stem.
- c. Explain the Tunica Corpus theory.
- d. Give an account of plant gums.
- 6. Write about the following: $(30 \times 2 = 60)$
 - a. Give an account of pollen grain morphology and application of palynology.
 - b. Discuss the role of chemotaxonomy and numerical taxonomy in systematics of Angiosperms.

- 7. Write critical notes on the following: $(20 \times 3 = 60)$
 - a. Floral structure and primitive characters of Magnoliaceae.
 - b. Floral structure and floral formula of Poaceae.
 - c. Differentiate between the pollinia of Asclepiadaceae and Orchidaceae.
- 8. Write short notes on the following: $(20 \times 3 = 60)$
 - a. Give an account of beverage yielding plants.
 - b. Differentiate between xylem and phloem.
 - c. Give the salient features of Bentham and Hooker's system of classification.