

BOTANY (Paper I)

Time Allowed : Three Hours

Maximum Marks : 300

QUESTION PAPER SPECIFIC INSTRUCTIONS

(Please read each of the following instructions carefully before attempting questions)

There are EIGHT questions divided in two Sections.

Candidate has to attempt FIVE questions in all.

Question Nos. 1 and 5 are compulsory and out of the remaining, any THREE are to be attempted choosing at least ONE question from each Section.

The number of marks carried by a question/part is indicated against it.

Wherever any assumptions are made for answering a question, they must be clearly indicated.

Word limit in questions, wherever specified, should be adhered to.

SECTION 'A'

1. Answer any three of the following in not more than 200 words each:
20×3=60
 - (a) Describe the types of plant diseases caused by viruses. Explain their control measures.
 - (b) Describe ultrastructure of flagella in Algae.
 - (c) Describe and draw labelled diagrams of steles in pteridophytes with examples.
 - (d) Enumerate economic uses of fungi in India.
2. Write critical notes on the following:
20×3=60
 - (a) Algae as a food, feed and medicine
 - (b) Distribution of bryophytes and pteridophytes in deciduous and evergreen forests in India
 - (c) Applications of plant tissue culture in forestry and agriculture
3. Write notes on the following:
20×3=60
 - (a) Reproductive stages in Oedogonium
 - (b) Asexual reproduction in Aspergillus
 - (c) Ultrastructure of a bacterial cell
4. How do the following differ from each other:
20×3=60
 - (a) Fungal hyphae and Algal filament
 - (b) Sporophytes of Anthoceros and Funaria
 - (c) Prothalli of Selaginella and Nephrolepis

SECTION 'B'

5. Answer any three of the following in not more than 200 words each:
20×3=60
 - (a) Discuss secondary growth in lianas.
 - (b) Give an account of the use of pollen morphological characters in systematics.
 - (c) Describe the importance of ethnobotany in the welfare of tribal and rural people.

- (d) Compare the outline of system of classification of angiosperms proposed by Hutchinson with the system proposed by Bentham and Hooker.

6. Write notes on the following:

20×3=60

- (a) Botanical name, active constituents and uses of any five commercial medicinal plants of India
- (b) Secondary growth in woody monocots
- (c) Origin of cultivated plants with reference to Vavilov's theory

7. Draw neat and labelled diagrams of the following:

20×3=60

- (a) Stomata of sunflower and maize
- (b) Male cone and Microsporophyll of Pinus
- (c) Male and female flower of Euphorbia

8. Answer the following:

30×2=60

- (a) Give an account of diagnostic characters of Liliaceae and Palmae with suitable examples.
- (b) Describe the commercial importance of gum, resin and dye yielding plants in India.