

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.

All questions carry equal marks.

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
 - (a) Describe the characters which indicate that blue-green algae are primitive and ancient members of plant kingdom.
 - (b) What is retrogressive origin of Saprophytes in Bryophytes?
 - (c) Describe the various types of fruiting bodies in Ascomycetes.
 - (d) Describe the reproductive structure in Ectocarpus.
2. Give a concise account of the life cycle of the causal organism, symptoms and control measures of any four of the following diseases
 - (a) Root knot disease of tomato
 - (b) Late blight of potato
 - (c) Leaf curl disease of papaya
 - (d) Red rot of sugarcane
 - (e) White wart of cucurbits
3.
 - (a) Describe different types of vascular steles in Lycopodium.
 - (b) Describe sexual reproduction in Oedogonium.
 - (c) Give structure of a bacterial cell.
 - (d) Describe the leaf structure of Polytrichum.
4.
 - (a) Describe the structure of Psilotum.
 - (b) Describe Puri and Garg's theory of morphological nature of Marsilea sporocarp.
 - (c) Write short notes on (i) Gemma Cup (ii) Endothecium (iii) Carposporophyte (iv) Apothecium

SECTION 'B'

5. Answer any three of the following in not more than 200 words each
 - (a) Enumerate the primitive and advanced characters of flowers.
 - (b) Give an account of the pollen morphological characters.
 - (c) Describe the structure of the flower of Liliaceae.

- (d) Describe variations in placentation in Thalamiflorae.
- 6. Compare the following sets
 - (a) Microsporophyll of *Cycas* and *Pinus*
 - (b) Inflorescence in *Ficus* and *Morus*
 - (c) Dorsiventral and Isobilateral leaf
 - (d) Glandular and Amoeboid tapetum
- 7.
 - (a) Describe the ovule structure at the time of pollination in *Gnetum*.
 - (b) Give an account of the organization of shoot apical meristem.
 - (c) Describe the importance of a Herbarium. Mention two major Herbaria of India.
- 8.
 - (a) What are somatic hybrids? How are they produced? Discuss the significance of these hybrids.
 - (b) Describe the floral structure of Rosaceae giving floral diagram and floral formula.
 - (c) Write short notes on the following: (i) ICBN (ii) Apomixis (iii) Totipotency (iv) Heterostyly (v) Ultrastructure of egg apparatus