

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) Distinguish between bacteriophages and plasmids. Give their molecular structure. How are plasmids useful in genetic engineering?
- (b) Discuss the role of pigmentation and reserved food in the classification of algae.
- (c) How does a parasite recognize its host? Describe the molecular basis of host-parasite relationship.
- (d) Describe the structure and evolutionary significance of Rhynia.
2. (a) Describe the mode of sexual reproduction in yeast. **30**
- (b) Describe the role of microbes in medicine industry. **30**
3. Discuss the evolutionary trends of sporophytes in Bryophytes. **60**
4. What is heterotrichous habit in Algae? Discuss its role in the evolution of terrestrial habit. **60**

SECTION 'B'

5. Answer any three of the following in not more than 200 words each: **20×3=60**
- (a) "Jurassic was the best age of Gymnosperms." Discuss.
- (b) Describe the role of embryology in classification of angiosperms.
- (c) Describe the detailed structure of pollen wall. How has palynology helped in forensic science?
- (d) What are the primitive and advanced characters of flower used in deriving their phylogeny?
6. What is double fertilization? In the light of recent studies discuss the mode of fertilization in angiosperms. **60**
7. (a) How are somatic hybrids obtained? **30**
- (b) Ovule bearing organ of Pinus is a highly reduced shoot in the axil of bract. Discuss. **30**
8. Give important flower characters of the following families. Give economic importance of three plants from each family. **15×4=60**
- (a) Apiaceae

- (b) Rubiaceae
- (c) Arecaceae
- (d) Brassicaceae