

BOTANY

PAPER—I

Time Allowed : Three Hours

Maximum Marks : 200

QUESTION PAPER SPECIFIC INSTRUCTIONS

**Please read each of the following instructions carefully
before attempting questions**

There are EIGHT questions in all, out of which FIVE are to be attempted.

Question Nos. 1 and 5 are compulsory. Out of the remaining SIX questions, THREE are to be attempted selecting at least ONE question from each of the two Sections A and B.

Attempts of questions shall be counted in sequential order. Unless struck off, attempt of a question shall be counted even if attempted partly. Any page or portion of the page left blank in the Question-cum-Answer Booklet must be clearly struck off.

All questions carry equal marks. The number of marks carried by a question/part is indicated against it.

Answers must be written in ENGLISH only.

Neat sketches may be drawn, wherever required.

SECTION—A

1. Answer the following keeping your answers brief and to the point : 5×8=40
- (a) What is plant quarantine?
 - (b) What is the significance of aflatoxins?
 - (c) Describe the role of microbes in production of antibiotics.
 - (d) Comment upon the palmella stage.
 - (e) Discuss the stages of development of male gametophyte in *Pinus* before pollination.
 - (f) What is the use of Bordeaux mixture? How is it prepared?
 - (g) What is the importance of VAM?
 - (h) With the help of labelled diagram, describe the reproductive organs of *Chara*.
2. (a) Describe the asexual reproduction in *Penicillium*. 10
- (b) Explain the structure of TMV. 10
- (c) How are the fungal toxins classified according to their source of origin? 10
- (d) Draw a well-labelled diagram through median LS of strobilus of *Selaginella* and discuss its main features. 10
3. (a) With the help of suitable diagrams, describe the development of sporophyte in bryophytes. 15
- (b) What are the various methods of genetic recombination in bacteria? 15
- (c) Compare the morphological characters of male and female strobili in *Gnetum*. 10

4. (a) Draw scientifically accurate diagrams of the following and label the parts : 5+5+5=15
- (i) Flower of *Cycadeoidea*
 - (ii) LS of *Pinus* seed
 - (iii) TS of leaf of *Cordaites*
- (b) Write short notes on the following : 5+5+5=15
- (i) Tundu disease of wheat
 - (ii) Powdery mildew diseases in plants
 - (iii) Diseases caused by mycoplasma
- (c) What is the main basis of classification in algae? Describe the important characters of various classes of algae. 10

SECTION—B

5. Write on the following keeping your answers brief and to the point : 5×8=40
- (a) Inflorescence in Musaceae
 - (b) Primitive characters of Magnoliaceae
 - (c) *Allium* type of embryo sac
 - (d) Parthenocarpy
 - (e) Kranz anatomy
 - (f) Distinguishing features of Orchidaceae
 - (g) Plants as source of spices
 - (h) Inflorescence of Euphorbiaceae
6. (a) Write down the botanical names and the uses of the plants of economic importance belonging to the family Cucurbitaceae. 10
- (b) Briefly discuss the technique for raising haploids from microspores. 10
- (c) Comment upon the applied aspects of palynology. 10
- (d) Write a brief and critical note on polyembryony and give its importance. 10

7. (a) Which plants are being used as a potential source of future energy?
Support your answer in pretext with Indian conditions. 15
- (b) What are the salient features of the family Poaceae? 15
- (c) Write short notes on the following : 5+5=10
- (i) Botanical gardens
- (ii) Herbaria
8. (a) Write short notes on the following : 10+10=20
- (i) Protoplast fusion
- (ii) Role of somatic hybrids in crop improvement
- (b) Give the salient features of Engler and Prantl's system of classification and compare it with that of Bentham and Hooker's system of classification. 20
