

I.F.S. EXAM-2015

C-GEQ-O-CPUA

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

\*\*\*