Civil Services (Main) Examination, 2011

AGRICULTURE

(Paper II)

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 the following questions in about 150 words each:– **15×4=60**

(a) What are transgenics? Discuss the major biosafety concerns of genetically modified crops.

(b) What are cytoplasmic mutations? Discuss their role in crop improvement.

(c) What is roguing? Discuss its importance in quality seed production.

(d) What is photoinsensitivity? Discuss its significance in crop production.

2. Answer the following in about 150 words each:– **15×4=60**

(a) Describe briefly the ultrastructure of a plant cell. Explain cell as a structural and functional unit of life.

(b) What are haploids? How are they produced? Discuss their applications in crop improvement.

(c) Discuss critically the strengths and weaknesses of seed industry in India.

(d) What are plant antitranspirants? Discuss their applications giving suitable examples.

3. Answer the following in about 150 words each:– **15×4=60**

(a) What is heritability? Explain the types of heritability and their significance in crop improvement.

(b) What is hybridization? Briefly discuss the techniques in hybridization.

(c) Give a brief account of seed legislation in India.

(d) Distinguish between the C_3 and C_4 mechanisms of photosynthesis and discuss the biological significance of C_4 cycle.

4. Write short notes on the following in about 150 words each:– **15×4=60**

(a) Somaclonal variation and its use in crop improvement.

(b) Molecular markers and their applications in plant improvement.

(c) Seed registration.

(d) Plant enzymes and their role in the vital activities of plants.

English version compiled from published transcriptions and cross-checked across sources; not a facsimile of the official UPSC question paper.

Optional Province · optionalprovince.com

SECTION 'B'

5. Answer the following in about 150 words each:– **15×4=60**

(a) Define polyembryony. Discuss its significance in horticulture with special reference to mango and citrus.

(b) Write the diagnostic symptoms of potato spindle tuber disease, its mode of transmission and management.

(c) What is micropropagation? What are its advantages? Give suitable examples of its utilization in horticultural crops.

(d) What is a pheromone trap? Discuss its use in pest management.

6. Answer the following in about 150 words each:– **15×4=60**

(a) Describe candied fruits, glazed fruits and crystallized fruits and give the principles involved in their preservation.

(b) List out the major insect pests of citrus. Write in detail about citrus psylla with its management.

(c) What is plant quarantine? How does it regulate the import and export of plants and seed material?

(d) What is food security? Write a note on food grain production and food security.

7. Answer the following in about 150 words each:– **15×4=60**

(a) Elucidate the medicinal uses of ‘Sarpagandha’ (Rauwolfia serpentina). Recommend the viable production technology for ‘Sarpagandha’.

(b) Describe the production technology for carnation under greenhouse conditions.

(c) Write in brief the diagnostic symptoms of bunchy top of banana, its mode of transmission and management practices to combat the problem.

(d) Discuss the present status of cashewnut industry in India with reference to production, productivity, consumption and export. Suggest strategies for its further improvement.

8. Write short notes on the following in about 150 words each:– **15×4=60**

(a) Ikebana.

(b) NETO and NEPO viruses.

(c) Sex expression in papaya.

(d) Pesticide residue toxicity in fruits and vegetables.

Optional Province · optionalprovince.com