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Total No. of Printed Pages: 1

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B.Sc. (Hons) Agriculture (Semester – 6th)
CROPS IMPROVEMENT-II (RABI CROPS)
Subject Code: BAGRS1-656
Paper ID: [19130160]

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(2 marks each)

Q1. Attempt the following:

- a. What are the centres of origin for maize and wheat?
- b. What is meant by the term 'Plant Genetic Resources' (PGR)?
- c. Name two major abiotic stress factors that affect crop production.
- d. What is an ideotype in crop breeding?
- e. Name any one method used for conserving plant genetic resources.
- f. Give an example of a modern biotechnology tool used in crop breeding.
- g. What role do biotic stress-resistant varieties play in sustainable agriculture?
- h. Define the term 'wild relatives' in the context of crop improvement.
- i. Give an example of a modern biotechnology tool used in crop breeding.
- j. Explain the term 'gene bank' in the context of crop genetic resource conservation.

Section – B

(5 marks each)

- Q2. Discuss the challenges and strategies for the development of climate-resilient varieties, including drought, salinity, and heat stress tolerance.
- Q3. Define the term "quality" in crop improvement. Discuss how physical, chemical, and nutritional quality traits are improved in crops.
- Q4. Explain the problems and current status of crop improvement in India, with special reference to the work done in Punjab.
- Q5. Differentiate between qualitative and quantitative traits in crop genetics, giving examples of each in major crops.
- Q6. Describe the role of National and International centres of crop improvement, emphasizing their contributions to global crop enhancement efforts.

Section – C

(10 marks each)

- Q7. Compare and contrast conventional and non-conventional methods for crop improvement. Discuss the advantages and limitations of each.
- Q8. Describe the major breeding procedures used in developing high-yielding, disease-resistant, and stress-tolerant varieties. Illustrate your answer with examples from relevant crops.
- Q9. Describe the importance of wild relatives in the crop improvement process. How do they contribute to enhancing genetic diversity in cultivated crops?