

PRACTICE SET

End Semester (3rd Semester.) Examination, Dec., 2025

Program: B. Sc. (Hons.) Agriculture
Semester: IIIrd
Course: Fundamentals of Plant Breeding
Course Code: 13A.209

Course Outcome:

By the end of the course ,students should be able to ;

CO1-Demonstrate knowledge of the historical context and significance of plant breeding.

CO2-Apply various breeding methods and techniques to improve crop characteristics.

CO3- Evaluate the genetic consequences of inbreeding and outcrossing in pant populations.

CO4-Design and conduct plant breeding experiments, analyse data, and interpret results.

Unit / Module-1

Section: I (5 Marks questions, only Lower order Thinking -LOT)

Sl. No	Model Questions	Bloom Taxonomy	CO
1	List the major achievements and future prospects in the historical development of plant breeding.	Remember	CO1
2	Define the term plant breeding <i>and</i> outline its nature and role in crop improvement.	Remember	CO1
3	Compare self-pollination and cross-pollination with respect to genetic variation.	Understand	CO1
4	Discuss the different modes of reproduction in plants and their significance in selecting breeding methods.	Understand	CO1
5	Illustrate how male sterility and self-incompatibility can be utilized in hybrid seed production.	Apply	CO1

Section II (15 Marks questions, -HOT)

Sl. No	Model Questions	Bloom Taxonomy	CO
6	Outline the historical evolution of plant breeding and differentiate between traditional and modern breeding approaches.	Analyze	CO1
7	Classify the various mechanisms that promote self and cross-pollination in crops.	Analyse	CO1
8	Examine the genetic consequences of self-pollination,	Analyse	CO1

	cross-pollination, and apomixis in crop populations.		
9	Evaluate the usefulness of male sterility and self-incompatibility mechanisms in hybrid seed production systems.	Evaluate	CO1
10	Design a breeding strategy for developing a new cultivar considering mode of reproduction and genetic factors.	Create	CO1

Unit / Module-2

Section: I (5 Marks questions, only Lower order Thinking -LOT)

Sl. No	Model Questions	Bloom Taxonomy	CO
11	Discuss the differences between mass selection and pure line selection with suitable examples.	Understand	CO2
12	Define the terms heritability <i>and</i> genetic advance and state their significance in plant breeding.	Remember	CO3
13	Illustrate the procedure of the pedigree method of selection with suitable examples.	Apply	CO2
14	Explain the process of domestication and its role in the development of cultivated crops.	Understand	CO1
15	Summarise the various plant breeding activities to create desired changes in the genotype of crop species.	Understand	CO2

Section II (15 Marks questions, higher order thinking-HOT)

Sl. No	Model Questions	Bloom Taxonomy	CO
16	Develop a comprehensive hybridization scheme incorporating proper selection and handling of segregating populations for high-yielding varieties. Of self pollinated crop.	Create	CO4
17	Examine the components of genetic variation and differentiate between genotypic and phenotypic variance in crop breeding.	Analyse	CO3
18	Evaluate the effectiveness of mass selection versus pure line selection for improving yield stability in self-pollinated crops.	Evaluate	CO2
19	Differentiate between the pedigree method and the bulk method of plant breeding.	Analyse	CO2
20	Analyze the procedure involved in the transfer of a dominant gene for disease resistance through the backcross breeding method by highlighting the purpose, expected genetic composition, and selection criteria at each generation.	Analyse	CO2

Unit / Module-3

Section: I (5 Marks questions, only Lower order Thinking -LOT)

Sl. No	Model Questions	Bloom Taxonomy	CO
21	Compare recurrent selection with mass selection.	Understand	CO2
22	Recall the steps involved in developing inbred lines.	Remember	CO3
23	Summarize how heterosis is exploited in hybrid development.	Understand	CO3
24	Identify major types of recurrent selection schemes.	Understand	CO2
25	Illustrate briefly the A-line, B-line and R-line systems of hybrid seed production in rice.	Apply	CO3

Section: II (15 Marks questions, HOT)

Sl. No	Model Questions	Bloom Taxonomy	CO
26	Create a detailed development plan for a synthetic variety, including step-by-step procedures involved and strategies to maximize its advantages.	Create	CO4
27	Explain various factors affecting Hardy-Weinberg Law.	Analyse	CO2
28	Evaluate various breeding methods used for developing drought and salt-tolerant varieties in crop plants.	Evaluate	CO3
29	Analyze the breeding methods required to utilize insect resistance governed by a recessive gene in an unadapted variety, focusing on the identification and incorporation of the resistance gene in crop improvement.	Analyse	CO3
30	Explain various mechanisms of insect resistance in crop plants with suitable examples.	Analyse	CO3

Unit / Module-4**Section: I (5 Marks questions, only Lower order Thinking -LOT)**

Sl. No	Model Questions	Bloom Taxonomy	CO
31	Illustrate participatory plant breeding with suitable examples.	Understand	CO4.
32	Recall the key components of Plant Breeders' and Farmers' Rights.	Remember	CO4
33	Summarize the role of polyploidy in crop improvement.	Understand	CO3
34	Define clonal selection and its importance.	Remember	CO2
35	Apply mutation breeding methods to create genetic variation.	Apply	CO2

Section II (15 Marks questions, HOT)

Sl. No	Model Questions	Bloom Taxonomy	CO
36	Analyze the comparative advantages of clonal versus sexual breeding methods.	Analyze	CO4
37	Compare conventional and molecular marker-assisted selection methods.	Analyze	CO4
38	Design a participatory breeding programme involving farmers for stress-tolerant crops.	Create	CO4
39	Evaluate the effectiveness of mutation breeding in developing disease-resistant cultivars.	Evaluate	CO4
40	Assess the role of biotechnological tools in addressing abiotic stress tolerance.	Evaluate	CO4

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Summary Sheet:

CO Wise

CO	Question . No.	Marks
CO1	1,2,3,4,5,6,7,8,9,10,14	105
CO2	11,13,15, 16,18,19,20,21,24,27,34,35	110
CO3	12,17,22,23,25,26,28,29,30,33	100
CO4	31,32,36,37,38,39,40	85
Total		400

Unit Wise

Unit	Q. No	Marks
Unit 1	1,2,3,4,5,6,7,8,9,10	100
Unit 2	11,12,13,14,15,16,17,18,19,20	100
Unit 3	21,22,23,24,25,26,27,28,29,30	100
Unit 4	31,32,33,34,35,36,37,38,39,40	100
Total		400

Blooms Taxonomy Level (BTL) Wise

BTL	Q. No	Marks
LOT	1,2,3,4,5,6,11,12,13,14,15,21,22,23,24,25,31,32,33,34,35	100
HOT	6,7,8,9,10,16,17,18,19,20,26,27,28,29,30,36,37,38,39,40	300
Total		400

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Disclaimer: - This is a practice set. The Question in End semester examination will differ from the practice set. This practice set is meant for practice only.