PRACTICE SET
End Semester (1st Semester) Examination, December, 2025

Program: M. Sc. (Agri.) Agronomy
Subject: Principles and Practices of Weed Management
Subject Code: 13A.AGRON.503

Course Outcome
After completion of the course the students will be able to;
CO1: Understand weed biology and ecology**,** including crop-weed competition, allelopathy, and weed classification methods.

CO2: Explain the principles, types, and mechanisms of herbicides**,** including their historical development and modes of action.

CO3: Analyze herbicide efficiency factors**,** formulations, mixtures, resistance issues, and sustainable management practices like bio-herbicides.

CO4: Develop crop-specific and system-based weed management strategies**,** including control of parasitic, aquatic, and perennial weeds.
CO5: Apply integrated weed management approaches and conduct cost-benefit analysis to ensure effective and economical weed control.

Unit / Module-1

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

Sl. No.	Model Questions	Bloom Taxonomy	CO
1.	Describe weed ecology and explain the role of environmental factors in weed distribution.	Understand	CO1
2.	Compare annual, biennial, and perennial weeds with suitable examples.	Understand	CO1
3.	Describe allelopathy and mention any two examples of allelopathic interactions between crops and weeds.	Remember	CO1
4.	List the principles of weed control and briefly describe any one of them.	Remember	CO1
5.	Explain the importance of weed index in assessing crop yield loss.	Understand	CO1

Section: II (15 Marks questions, HOT)

Sl. No.	Model Questions	Bloom Taxonomy	CO
6.	Breakdown the ecological adaptations of weeds that enable them to survive and dominate in agroecosystems.	Analyse	CO1
7.	Evaluate the dynamics of crop-weed competition during critical period and assess the influence of allelopathy on this interaction.	Evaluate	CO1
8.	Examine the integrated weed management (IWM) approach along with the advantages and limitations of combining cultural, mechanical, biological, and chemical control methods.	Analyse	CO1
9.	Classify weeds based on their life cycle and habitat. Explain with examples how this classification helps in devising effective control measures.	Analyse	CO1
10.	Review different weed indices evaluating the effectiveness of weed management practices in field experiments?	Evaluate	CO1

Unit / Module-2

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

Sl. No.	Model Questions	Bloom Taxonomy	CO
11.	Explain herbicide and describe its importance in modern weed management.	Understand	CO2
12.	List the key milestones in the history of herbicide development.	Remember	CO2
13.	Enlist the advantages and limitations of using herbicides for weed control.	Remember	CO2
14.	Describe herbicide formulation and explain why adjuvants are used.	Understand	CO2
15.	List any five commonly used herbicides in India and state their target weed or crop.	Remember	CO2

Section: II (15 Marks questions, HOT)

Sl. No.	Model Questions	Bloom Taxonomy	CO
16.	Evaluate the environmental implications of herbicide use, including residue problems and effects on soil microflora.	Evaluate	CO2
17.	Explain the integrated use of herbicides with other weed management practices in sustainable agriculture.	Analyse	CO2
18.	Review few herbicides classification based on chemical composition, physiological application and selectivity with suitable examples.	Evaluate	CO2
19.	Classify herbicides based on chemical nature, method of application, and physiological action with examples.	Analyse	CO2
20.	Compare and contrast the mechanism of action of contact and systemic herbicides with examples.	Analyse	CO2

Unit / Module-3

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

Sl. No.	Model Questions	Bloom Taxonomy	CO
21.	List any five factors that affect the efficiency of herbicides in the field.	Remember	CO3
22.	Define herbicide residual effect along with suitable examples.	Remember	CO3
23.	Describe herbicide resistance? Mention two examples of herbicide-resistant weeds.	Understand	CO3
24.	Illustrate bio-herbicides with three examples.	Apply	CO3
25.	Explain allelochemicals and their role in weed control.	Understand	CO3

Section: II (15 Marks questions, HOT)

Sl. No.	Model Questions	Bloom Taxonomy	CO
26.	Evaluate the role of allelochemicals as natural herbicides. How can allelopathic crops and natural plant extracts contribute to eco-friendly weed control?	Evaluate	CO3
27.	Breakdown the concept, advantages, and limitations of herbicide mixtures. Discuss the rationale for using tank mixes in integrated weed management.	Analyze	CO3
28.	Analyze the factors influencing herbicide efficiency under field conditions, including soil, environmental, and biological factors.	Analyse	CO3
29.	Categorize different types of herbicide formulations and discuss its effects on herbicide performance and safety.	Analyse	CO3
30.	Evaluate the combined impact of herbicide structural properties, formulations and degradation mechanisms on their efficiency, selectivity and resistance management in crops and weeds.	Evaluate	CO3

Unit / Module-4

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

Sl. No.	Model Questions	Bloom Taxonomy	CO
31.	Describe weed management and its importance in crop production.	Understand	CO4
32.	List five major weeds commonly found in rice or wheat cropping systems.	Remember	CO4
33.	Enlist any four aquatic weeds and mention one control method for each.	Remember	CO4
34.	State any four integrated weed management (IWM) practices commonly used in cereal-based cropping systems.	Remember	CO4
35.	Illustrate weed shift and causes for weed shift in cropping systems.	Apply	CO4

Section: II (15 Marks questions, HOT)

Sl. No.	Model Questions	Bloom Taxonomy	CO
36.	Categorize integrated weed management approaches for oilseed and pulse crops, highlighting cultural and chemical methods.	Analyze	CO4
37.	Analyze the problem of weed shifts under continuous herbicide use. Discuss strategies to prevent or manage weed flora changes in intensive cropping systems.	Analyze	CO4
38.	Evaluate the advantages and limitations of biological control of aquatic weeds, using *Eichhornia crassipes* (water hyacinth) as an example.	Analyze	CO4
39.	Examine the challenges and management of perennial weeds such as *Cyperus rotundus* and *Convolvulus arvensis* in field crops.	Analyze	CO4
40.	Breakdown in detail the integrated weed management strategies for major cereal crops such as rice, wheat, and maize. Explain the influence of crop growth stages on the choice of timing of control methods.	Analyze	CO4

Unit / Module-5

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

Sl. No.	Model Questions	Bloom Taxonomy	CO
41.	List any five cultural practices used in integrated weed management.	Remember	CO5
42.	Define cost: benefit ratio (CBR) in the context of weed management.	Remember	CO5
43.	Mention any three advantages of integrated weed management over chemical control alone.	Remember	CO5
44.	Illustrate preventive and curative weed management practices along with examples.	Apply	CO5
45.	Discuss integrated weed management strategies of any crop grown in Jharkhand.	Remember	CO5

Section: II (15 Marks questions, HOT)

Sl. No.	Model Questions	Bloom Taxonomy	CO
46.	Analyze the different components of integrated weed management, including cultural, mechanical, biological, and chemical methods, with suitable examples.	Analyze	CO5
47.	Evaluate the economic feasibility of integrated weed management compared to sole herbicide use. Include examples from field studies or crops.	Evaluate	CO5
48.	Formulate an integrated weed management plan for a rice–wheat cropping system that maximizes yield while minimizing costs and environmental impact. Include cultural, mechanical, chemical, and biological control measures, and justify your choice of methods based on cost:benefit considerations.	Create	CO5
49.	Create an integrated weed management protocol for controlling perennial and aquatic weeds in an irrigated rice field. Explain the combination of methods chosen and how they reduce labor, chemical use, and environmental impact.	Create	CO5
50.	Design a field experiment to compare the economic and ecological efficiency of three different integrated weed management approaches in a pulse crop. Include experimental layout, parameters to be measured, and a method to calculate cost:benefit ratio.	Create	CO5

SUMMARY SHEET:

CO WISE

CO	**Question No.**	**Marks**
CO1	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	100
CO2	11, 12, 13, 14, 15, 16, 17, 18, 19, 20	100
CO3	21, 22, 23, 24, 25, 26, 27, 28, 29, 30	100

CO4	31, 32, 33, 34, 35, 36, 37, 38, 39, 40	100
CO5	41, 42, 43, 44, 45, 46, 47, 48, 49, 50	100
TOTAL		**500**

UNIT Wise

CO	**Question No.**	**Marks**
UNIT1	1-10	100
UNIT2	11-20	100
UNIT3	21-30	100
UNIT4	31-40	100
UNIT5	41-50	100
TOTAL		**500**

BLOOM'S Taxonomy Level (BTL) Wise

BTL	**Question. No.**	**Marks**
LOT	1, 2, 3, 4, 5, 11, 12, 13, 14, 15, 21, 22, 23, 24, 25, 31, 32, 33, 34, 35, 41, 42, 43, 44, 45	125
HOT	6, 7, 8, 9, 10, 16, 17, 18, 19,20, 26, 27, 28, 29, 30, 36, 37, 38, 39, 40, 46, 47, 48, 49, 50	375
TOTAL		**500**

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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.