Practice Set
End Semester (2nd Sem.) Examination, May, 2026

Program: B. Sc. (Hons.) Agriculture
Semester: II
Course: Soil Fertility Management
Course Code: SS 121
Course Outcomes:
At the end of the Course, the Student will be able to-

CO1 Develop knowledge of soil fertility, plant nutrition, nutrient transport, and the chemistry of nutrients. Identify the roles, deficiencies, and toxicities of essential nutrients.

CO2 Gain expertise in evaluating soil fertility, soil testing, plant analysis, and rapid tissue tests. Understand critical nutrient levels and forms in soil.

CO3 Learn about manures, fertilizers, and nutrient management approaches. Study fertilizer classification, composition, properties, and methods to improve nutrient use efficiency.

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

UNIT-I

Sl. No.	Model Questions	Blooms Taxonomy	CO
1.	Compare between soil fertility and productivity.	Understand	CO1
2.	Explain role and functions of Sulfur for oilseed crops.	Understand	CO1
3.	Classify plant essential elements according to their mobility in plant and soil.	Understand	CO1
4.	Define criteria of essentiality of nutrient to plants. Make a chart of different groups of plant essential nutrient.	Remember	CO1
5.	Define a) Luxury consumption b) Hidden Hunger	Remember	CO1

Section: II (10 Marks questions, only Higher Order Thinking -HOT)

Sl. No.	Model Questions	Blooms Taxonomy	CO

6	Outline the mechanisms of nutrient transport to plants from soil. What are the factors affecting the process of nutrient transport in soil	Analyze	CO1
7	Analyze the symptoms of nutrient deficiency of macro nutrient on plants.	Analyze	CO1
8	Categorize role, function and deficiency symptoms of NPK, Zn and Fe in soil.	Analyze	CO1
9	Analyze the various transformations of Iron (Fe) and Zinc (Zn) in soil, including their chemical forms, reactions, and factors affecting their availability.	Analyze	CO1
10	Analyze the deficiency symptoms of essential micronutrients in plants and their impact on plant growth and development.	Analyze	CO1

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

UNIT-II

Sl. No.	Model Questions	Blooms Taxonomy	CO
11	Tabulate methods of testing available nutrients in soil along with the name of scientists	Remember	CO2
12	Enlist indicator plants of different nutrients	Remember	CO2
13	Compare rapid tissue and DRIS method of soil fertility evaluation	Understand	CO2
14	Explain using a flow chart : Deficiency symptoms of nutrients on leaves.	Understand	CO2
15	Explain the concept of carbon sequestration with suitable examples.	Understand	CO2

Section: II (10 Marks questions, only Higher Order Thinking -HOT)

Sl. No.	Model Questions	Blooms Taxonomy	CO
16	Organize a systematic steps involved in soil testing and briefly examine the precaution measure while soil testing.	Analyze	CO2
17	Analyze the mechanism of nutrient movement to plant roots?	Analyze	CO2
18	Examine the concept of NUE and discuss practical methods to enhance it in soil.	Analyze	CO2
19	Evaluate the fertilizer requirement of a crop which require 80Kg, 60 Kg,75 kg of NPK respectively.	Evaluate	CO2
20	Recommend the precaution measure we should take while soil sampling.	Evaluate	CO2

UNIT-III

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

Sl. No.	Model Questions	Blooms Taxonomy	CO
21	Compare between manures and fertilizers.	Understand	CO3
22	Illustrate classification of bulky organic manures	Apply	CO3
23	Define green manuring? Differentiate between in-situ ad ex-situ green manuring with suitable examples.	Remember	CO3
24	Define vermicompost. Explain the method of preparation & species used in vermicomposting.	Remember	CO3
25	Compare between low analysis and high analysis fertilizer?	Understand	CO3

Section: II (10 Marks questions, only Higher Order Thinking -HOT)

Sl. No.	Model Questions	Blooms Taxonomy	CO
26	Critically examine the various techniques of green manuring and evaluate their advantages and limitations in sustainable agriculture. Suggest suitable strategies to overcome its constraints for wider adoption.	Analyze	CO3
27	Compare between bulky organic manure and concentrated organic manure. Inspect the role of organic manure in improving the properties of soil.	Analyze	CO3
28	Analyze the concept of Integrated Nutrient Management (INM) and examine its key components, need and advantages of adopting INM in achieving sustainable soil fertility and crop productivity.	Analyze	CO3
29	Critically evaluate the various factors influencing the quality of Farmyard Manure (FYM) and its impact on effectiveness in improving soil fertility and crop productivity.	Evaluate	CO3
30	Outline the different methods of composting, comparing their processes, advantages, and limitations, and evaluate their suitability under different farming conditions.	Analyze	CO3

UNIT IV

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

Sl. No.	Model Questions	Blooms Taxonomy	CO
31	Define nanofertilzer. Discuss benefits of using nano-fertilizers	Remember	CO3
32	Discuss different available forms of macro nutrient in soil.	Remember	CO1
33	List out the available form and sources of nitrogen to crop? Classify nitrogenous fertilizer with examples and mention nutrient content in them.	Remember	CO1
34	Define. a) Fertilizer Ratio & Fertilizer Grade b) Conditioners .	Remember	CO2
35	Explain fertilizer and give a detail classification of fertilizers based on the nutrient present in them.	Understand	CO2

Section: II (10 Marks questions, only Higher Order Thinking -HOT)

Sl. No.	Model Questions	Blooms Taxonomy	CO
36	Compare and analyze the properties of different nitrogenous fertilizers in terms of their composition, behavior in soil, and suitability for crops.	Analyze	CO3
37	Classify phosphatic fertilizers with examples based on their solubility. Also examine the general properties of different groups of phosphatic fertilizer.	Analyze	CO3
38	Examine the beneficial effects of liming in acidic soils and justify why gypsum is not considered a suitable liming material. Analyze the underlying chemical principles involved in soil amendment practices.	Analyze	CO1
39	Analyze short notes on a)Fertilizer Control Order b)Fertilizer Association of India (FAI) c)Customized Fertilizer	Analyze	CO1
40	Evaluate the role of carbon trading mechanisms in reducing global greenhouse gas emissions. Also measure its effectiveness and challenges in developing countries.	Evaluate	CO2

Summary Sheet:

CO Wise

CO	Q. No	Marks
CO1	1-10, 32,33,38,39	105
CO2	11-20, 40	95
CO3	21-30, 31, 36,37	100
Total		**300**

Unit Wise

Unit	Q. No	Marks
Unit-1	1-10	**75**
Unit-2	11-20	**75**
Unit-3	21-30	**75**
Unit-4	31-40	**75**
Total		**300**

Blooms Taxonomy Level (BTL) Wise

BTL	Q. No	Marks
LOT	1-5,11-15,21-25,31-35	**100**
HOT	6-10,16-20.26-30.36-40	**200**
Total		**300**

Submitted By: Mr. Rahul Kumar **Reviewed By: Dr. Neha Grace Angel Kisku**

Disclaimer: This is a Practice set paper. The questions in end term examination may differ from the Practice set. The Practice set is meant for practice only.