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M.SC. SEMESTER-I EXAMINATION, 2023
(AGRICULTURE) IN AGRONOMY

PAPER: AGRON 502

(PRICIPLES & PRACTICES OF SOIL FERTILITY & NUTRIENT MANAGEMENT)

Full Marks: 50

Time: 2 Hours

The figures in the right-hand margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

GROUP-A

1. Answer any **FIVE** questions from the following: **2 X 5 = 10**

- Differentiate between soil productivity and fertility.
- Define organic farming.
- Write down the criteria of essentiality.
- Briefly discuss the role of potassium in crop production.
- How earthworms convert organic waste to vermicompost?
- Write down nutrient composition of vermicompost.
- How nitrogen deficiency symptom could be assessed visually in crop plants?
- Distinguish between green manuring and green leaf manuring.

GROUP-B

2. Answer any **FOUR** questions from the following: **5 X 4 = 20**

- Write down advantages and disadvantages of bio-fertilizer.
- Briefly describe the principles of organic farming.
- Write down the constraints of organic farming.
- Write down the factors affecting quality of FYM.
- What are the advantages and disadvantages of fertilizer mixture?
- Write down the factors affecting soil fertility.
- Write down the procedure of scientific vermicomposting.
- What is Nutrient Interaction in Soil and how does it Influence Crop Yield? Write down the availability of major nutrient by the plant in soil. **3+2**

GROUP-C

3. Answer any **TWO** questions from the following: **10 X 2 = 20**

- Explain how nutrients are lost during Farm Yard Manure (FYM) storage and suggest ways to prevent this loss. Explain anaerobic and aerobic composting methods, highlighting their differences in decomposition, outcomes, and pros and cons. Differentiate between macronutrients and micronutrients in plants and provide an example of each. **2+3+5**

(P.T.O.)



(2)

- b. Differentiate between macronutrients and micronutrients in plants and provide an example of each. Explain the methods of fertilizer application with their merits and demerits. 5+5
- c. What are the techniques in increasing fertilizer use efficiency? Write two each example of slow release nitrogenous fertilizer and nitrification inhibitor. 6+4
- d. Write short note (any *FOUR*) (2.5 x 4 = 10)
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|--------------------------------|-----------------------------------|
| i) Nitrogen fixation in soil | iv) Hidden hunger |
| ii) Phosphate fixation in soil | v) Significance of bio-fertilizer |
| iii) Acidity of fertilizers | vi) Root interception |
