



GIET UNIVERSITY, GUNUPUR – 765022
B. Sc. (Ag.) (Fifth Semester) Examinations, January – 2023
AC-315 – Manure, Fertilizer and Soil Fertility Management

Time: 2 hrs

Maximum : 50 Marks

The figures in the right hand margin indicate marks.

PART – A

Q.1. Fill in the blanks with suitable word / figure.

(0.5 x 10 = 5 Marks)

- a. The essentiality criteria for nutrient elements was proposed by _____
- b. The C:N ration of Indian soil is _____.
- c. _____ is an example of non-burrowing earth worm.
- d. Insoluble phosphatic fertilisers are recommended for _____ soils.
- e. Nutrient element which is mobile in both soil and plant is _____.
- f. Yellowing of plant leaves due to deficiency of nitrogen is termed as _____.
- g. _____ is called as Quality element.
- h. _____ is known as heart of chlorophyll molecule.
- i. Luxury consumption is related to _____ element.
- j. The K₂O % present in potassium sulphate is _____.

Q. 2. Define (or) Explain the following in one or two sentences.

1 x 5 = 5 Marks)

- a. Fertiliser ratio
- b. Chlorosis
- c. Pouderette
- d. Nitrogenase
- e. Haber-Bosch process

Q3. Match the following

(0.5 x 10 = 5 Marks)

Column – A

Column – B

- | | |
|------------------------------------|------------------|
| (a) Universally deficient nutrient | (i) Phosphorus |
| (b) Water splitting enzyme | (ii) Sulphur |
| (c) Synthesis of IAA | (iii) Potassium |
| (d) Energy storage and transfer | (iv) Magnesium |
| (e) Quality element | (v) Iron |
| (f) Heart of chlorophyll | (vi) Boron |
| (g) Heme protein | (vii) Nitrogen |
| (h) Oil quality in oilseed crops | (viii) Manganese |
| (i) Pollen germination | (ix) Molybdenum |
| (j) Component of nitrogenase | (x) Zinc |

Q4. Write True or False against each statement

(0.5 x 10 = 5 Marks)

- a. Nitrogen is known as Universally deficient element.
- b. Molybdenum is an integral part of water splitting enzyme.
- c. Mass flow is the movement of nutrients along the concentration gradient..
- d. Bangalore method is an aerobic method of composting.
- e. CAN is a nitrogenous fertiliser which is neutral in nature.
- f. P and Zn are mutually antagonistic in nature.
- g. Nitrification is a biological oxidation process.
- h. Urea is an amide fertiliser.
- i. Potassium nitrate fertiliser is commonly used in green house plant production.
- j. Single super phosphate is an example of water soluble phosphatic fertiliser.

PART – B

Attempt ANY FIVE questions. All question carries equal marks

(6 x 5 = 30 Marks)

- 5. What is composting? Briefly explain Indore, Bangalore and NADEP method of composting. [1+5]
- 6. What is Kishan khad? Explain manufacturing process of CAN. [1+5]
- 7. What are the various forms of nitrogen in Soil-plant-atmosphere system? Explain the nitrogen dynamics along with various processes of its gains and losses in soil. [2+4]
- 8. Briefly explain various mechanisms of nutrient movement in soil. Differentiate between passive and active uptake of nutrients. [3+3]
- 9. Provide brief classification of various phosphatic fertilisers with appropriate examples.
- 10. What are the various forms of Phosphorus present in soil? List out various factors affecting P-availability in soil. [2+4]

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