Gandhi Institute of Engineering and Technology University, Odisha, Gunupur
(GIET University)

B. Sc. (Ag.) (Fifth Semester - Regular) Examinations, November – 2025

AC-315 - Manure, Fertiliser 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 propounded by _____
b. High analysis fertlisers should contain _____ % nutrient.
c. _____ bacteria converts nitrite to nitrate.
d. The process of loss of nitrogen from fertilisers as ammonia gas is called _____
e. _____ is considered as universally-deficient nutrient.
f. Single superphosphate (SSP) contains about _____ percent P_2O_5.
g. _____ element is involved in movement of Ca in plant.
h. Yellowing of plant leaves due to deficiency of nitrogen is termed as _____.
i. Vermicomposting uses _____ to convert organic waste into compost.
j. _____ is an example of citrate soluble fertiliser.

Q. 2. Define (or) Explain the following in one or two sentences. (1 x 5 = 5 Marks)

a. Secondary nutrient
b. Luxury consumption
c. Functional element
d. Mass flow
e. Denitrification

Q3. Match the following (0.5 x 10 = 5 Marks)

Column – A		Column – B	
(a)	Molybdenum	(i)	Khaira disease
(b)	Magnesium	(ii)	Top Sickness of tobacco
(c)	Calcium	(iii)	Turbidimetric method
(d)	Zinc	(iv)	Luxury Consumption
(e)	Phosphorus	(v)	Blossom End Rot of tomato
(f)	Sulphur	(vi)	Walkley and Black Method
(g)	Available N	(vii)	Interveinal chlorosis
(h)	Boron	(viii)	Alkaline permanganate method
(i)	Potassium	(ix)	Whiptail of cauliflower
(j)	Organic carbon	(x)	Olsen’s reagent

Q4. Write True or False against each statement **(0.5 x 10 = 5 Marks)**

a. Mass flow is the most dominant way of movement of nutrients from soil to plants.
b. Starter solutions are sprayed on the crops in the main field.
c. Symplastic pathway is known as the non-living pathway.
d. DAP is a complex fertiliser.
e. CAN is popularly known as “Kisan Khad”.
f. Diffusion is the principal supply mechanism for P and K.
g. FYM is a concentrated organic manure.
h. Potassium is responsible for stomatal opening and closing.
i. In Anaerobic composting, methane gas is released during the decomposition.
j. Nitrogen was discovered by Theodore De Saussure.

PART – B

Attempt *ANY FIVE* questions. All question carries equal marks **(6 x 5 = 30 Marks)**

5. Briefly describe the potassium cycle and dynamics of different forms of K in soil.
6. What is green manuring? Write down the different types of Green manures and benefits of green manuring.
7. Explain the mechanism of ion uptake by plants with suitable sketch.
8. What is aerobic composting? Write down two different methods of aerobic composting.
9. Write down the functions and deficiency symptoms of the following nutrients
    a) Phosphorus
    b) Calcium
10. Explain different processes of N loss from soil with proper sketch.

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