MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END THEORY EXAMINATION

B.Sc.(Hons.) Agriculture

Semester	: V	Term	: First	Academic Year	: 2024-25
Course No.	: SSAC 353	Title	: Manures, Fertilizers and Soil Fertility Management		
Credits	: 3 (2+1)				
Day & Date	: Monday, 14.10.2024	Time	: 14.00 to 17.00 hrs.	Total Marks	: 80

Note :
1. Solve **ANY EIGHT** questions from **SECTION 'A'**.
2. All questions from **SECTION 'B'** are compulsory.
3. All questions carry equal marks.
4. Draw neat diagram wherever necessary.

SECTION 'A'

Q.1 a) Give the available forms of essential nutrients and write the functions of secondary essential nutrients in brief.

b) Define Organic recycling. Write the significance of C:N ratio in detail.

Q.2 a) Write in detail regarding Bangalore method of composting and enlist the factors affecting process of composting.

b) Give the classification of Phosphatic fertilizers along with suitable examples and write down the characteristics of Monocalcium phosphate.

Q.3 a) Enlist the micronutrient fertilizers with suitable examples. Discuss the fate of micronutrients in soil.

b) Enlist the various mechanisms of nutrient ion transport from soil to plant. Describe any one of them in brief.

Q.4 a) Give the classification of concentrate organic manures with suitable examples. Enlist the factors affecting manurial value and decomposition of oil cakes.

b) Define Soil fertility. Enlist the methods of soil fertility evaluation in brief.

Q.5 a) Give the characteristics and advantages of complex fertilizers.

b) Define Vermicompost. Explain the pit method of vermicomposting in detail.

Q.6 a) Define Integrated Nutrient Management. Give its components and importance.

b) Define Fertilizer. Write the manufacture process of Calcium ammonia nitrate in detail.

Q.7 a) Write in detail about the handling and storage of fertilizers.

b) Enlist the factors affecting nutrient availability to plants. Give the measures to overcome deficiencies and toxicities of nutrients.

Q.8 a) What are the different fertilizer recommendation approaches? Describe STCR approach.

b) Define Fertilizer Use Efficiency. Enlist the factors affecting nutrient use efficiency in relation to soil characteristic.

(P.T.O.)

Q.9 a) Discuss the losses during handling and storage of farm yard manure.

b) Give the properties and manufacture process of urea.

Q.10 Write short notes on (Any Four):

a) Biogas plant slurry

b) NADEP method

c) Nano fertilizers

d) Indore method

e) Fertilizer Control Order

f) DRIS

SECTION 'B'

Q.11 Do as directed:

1) Carnallite mineral is used for preparation of _____ fertilizer. (Fill in the blank)

2) *Khaira* disease of paddy is because of Molybdenum deficiency. (State True or False)

3) Ammonium sulphate contains _____ per cent of Sulphur. (Fill in the blank)

4) $CaCN_2$ is the nitrate nitrogenous fertilizer. (State True or False)

5) _____ is the secondary nutrient that strengthens plant cell wall. (Fill in the blank)

6) Calcium and Boron are highly mobile elements in plant. (State True or False)

7) _____ is known as the 'Father of Agricultural Chemistry'. (Fill in the blank)

8) Oil cakes are partially decomposed bulky organic manures. (State True or False)

Q.12 Define the following terms:

1) Chelate

2) Essential nutrient

3) Sludge

4) Green manuring crops

5) Soil productivity

6) Composting

7) Sewage

8) Manures

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