MAHARASHTRA AGRICULTURAL UNIVERSITIES EXAMINATION BOARD, PUNE
SEMESTER END THEORY EXAMINATION

B.Sc.(Hons.) Agriculture

Semester	: V (New)	Term	: First	Academic Year	: 2023-24
Course No.	: SSAC 353	Title	: Manures, Fertilizers and Soil Fertility Management		
Credits	: 3 (2+1)				
Day & Date	: Friday, 8.12.2023	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) What is mixed fertilizer? Give its advantages and disadvantages.

b) Explain potassium fixation in soil.

Q.2 a) Define Soil fertility. What are the advantages of soil testing and state various approaches for fertilizer recommendation on the basis of soil test?

b) Discuss about losses during handling and storage of fertilizers.

Q.3 a) What are handling and storage losses of FYM?

b) Give sources of phosphorus to soil and classification of phosphatic fertilizer.

Q.4 a) Explain manufacturing process of Urea.

b) Explain the mechanism of transport of ions from soil to roots.

Q.5 a) What is Integrated Nutrient Management? Enlist the advantages of INM.

b) Describe in detail nitrogen fixation in soil.

Q.6 a) Define Nutrient use efficiency and explain factors influencing it.

b) State Arnon's criteria of essentiality of nutrients.

Q.7 a) Define Manures and classify them with suitable examples.

b) Define Composting. Enlist methods of composting.

Q.8 a) Write down in detail about sewage and sludge along with their composition.

b) Define C : N ratio and state its importance.

Q.9 a) Define FYM. Explain improved method of FYM preparation.

b) State elemental and chemical composition of organic matter.

Q.10 a) What is organic recycling? Enlist the sources of organic matter.

b) Give short notes on (Any Two):

i) Chelates ii) Nano fertilizers iii) Complex fertilizers

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SECTION 'B'

Q.11 Fill in the blanks:

1) _____ of the Rothamsted Experiment Station, England was first to make and use Super phosphate on his farm.

2) Chemical formula of Citrate soluble Phosphate is _____.

3) There are _____ essential nutrients for plants present in soil.

4) C : N ratio of saw dust is _____.

5) _____ are symbiotic bacteria.

6) _____ primary mineral is a rich source of potassium.

7) _____ was the first to start field plot experiment on his farm.

8) Toxicity of Calcium may lead to _____ chlorosis.

Q.12 Match the pairs:

'A'	'B'
1) Stunted growth of plant	a) Arnon and Stout
2) Single super phosphate	b) Thaer
3) Beneficial nutrient	c) Nitrogen deficiency
4) Muriate of potash	d) Dr. C.N. Acharya
5) Immobile nutrient in soil	e) 16% P_2O_5
6) Humus Theory	f) Silicon
7) Improved method of FYM preparation	g) Zinc
8) Essentiality of nutrient	h) 60% K_2O

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