

Cat. No: Ssac.3105

Marks: 80.00

Title: Soil chemistry, soil fertility and nutrient management (2+1)

Time: 3 hours

I Answer all questions

(10 x 1=10)

1. Father of field plot technique
 - a) Boussingault
 - b) Liebig
 - c) De Saussure
 - d) Gilbert J.H
2. Pahala blight of sugarcane was caused by
 - a) Potassium
 - b) Iron
 - c) Manganese
 - d) Sulphur
3. A situation in which a crop needs more of given nutrient yet the plants doesn't show any deficiency symptoms is called _____
4. The conversion of $\text{NH}_4^+ - \text{N}$ by autotrophic organism is called as _____
5. Saline soils are termed as _____
6. Reclamation of soil acidity through liming materials will limited to neutralize reserve acidity in soil (True or False)
7. The opening and closing of stomata is regulated by potassium (True or False)
8. Define Neutralizing Index
9. Define RSC
10. What is Flocculation and which element is responsible for flocculation

II Write short notes on any TEN questions

(10 x 3=30)

1. Diagnostic key to identify iron deficiency in plants
2. Arnon's criteria of essentiality concepts
3. Rapid tissue test for potassium
4. Active acidity
5. Neutralizing value
6. Critical level of nutrients in soils
7. SAR
8. Indicator plants for chemical methods of plant analysis
9. Ammonification
10. Sulphur oxidation

12. Impact of pesticide residues on soil and aquatic systems

III Write short essay on any SIX questions

(6x 5=30)

1. Write a short essay on classification of plant nutrients
2. Write about the transportation of iron in plant system
3. Briefly explain about the Nitrogen use efficiency
4. How the DRIS approaches is used to examine critical level in plants
5. Liming materials and their reactions
6. Briefly explain the characteristics of saline, saline sodic, sodic and calcareous soils
7. Give a brief account of forms and factors affecting the availability of nutrients in soils
8. Give an account on parameters for assessing the quality of irrigation water

IV Write essay on any ONE

(1 x 10=10)

1. Discuss the role of soil organic matter in maintaining soil fertility
2. Explain different approaches of Soil fertility evaluation