

KERALA AGRICULTURAL UNIVERSITY  
B.Sc (Hons.) Ag 2013 Admission  
V<sup>th</sup> Semester Final Examination- February-2016

Cat. No: Ssac.3105

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

Marks: 50.00

Time: 2 hours

(10 x 1=10)

**I Answer all questions**

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 Five questions**

(5x 2=10)

1. Arnon's criteria of essentiality concepts
2. Rapid tissue test for potassium
3. Critical level of nutrients in soils
4. SAR
5. Ammonification
6. Sulphur oxidation
7. Impact of pesticide residues on soil and aquatic systems

**III Write short essay on any Five questions**

(5x 4=20)

1. Write a short essay on classification of plant nutrients

4. Liming materials and their reactions
5. Briefly explain the characteristics of saline, saline sodic, sodic and calcareous soils
6. Give a brief account of forms and factors affecting the availability of nutrients in soils
7. Give an account on the 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