

# KERALA AGRICULTURAL UNIVERSITY

B.Sc (Hons.) Ag. 2012 Admission

V<sup>th</sup> Semester Final Examination- January/February-2015

3  
8

Cat. No: Ssac.3105

Marks: 80

Title: Soil chemistry ,Soil Fertility and Nutrient Management (2+1)

Time: 3 hours

I) Fill up the blanks

(10 x 1=10)

1. The most common useable form of N by plants is \_\_\_\_\_
2. Zn deficiency in rice causes \_\_\_\_\_ disease
3. A severe yield reduction without the appearance of deficiency symptoms is \_\_\_\_\_
4. Root interception occurs by \_\_\_\_\_ mechanism
5. \_\_\_\_\_ micro nutrient element is necessary for N fixation
6. Phosphorous is absorbed by plants largely as \_\_\_\_\_
7. DRIS method of soil fertility evaluation was given by \_\_\_\_\_

State True or False

8. Conversion of proteins into simpler amine /amid compounds is called nitrification
9. The ESP of sodic soils is < 15
10. The concept of nutrient mobility was given by Mitscherlich

II Write short notes on any TEN

(10 x 3=30)

1. Enlist Arnon's essentiality criteria
2. A value technique
3. Dynamics of potassium in soil
4. Leaching requirement of saline soils
5. What is cation exchange capacity
6. Differentiate saline and sodic soils
7. Factors affecting availability of nutrients
8. N transformation in soil
9. Soil test based fertilizer recommendation to crops
10. Give an account of Indian Standards for water quality
11. What are the mechanisms by which the nutrients in soil reach the root surface
12. What is degraded alkali soil

III Write short essays on SIX of the following

(6 x 5 =30)

1. Explain concepts ,approaches and techniques of soil fertility evaluation
2. What is humus .Differentiate humus and organic matter

3. Describe the 'P' cycle
4. Explain the role of organic matter in maintaining soil fertility
5. Discuss on the effect of pesticide on environment
6. How does soil reaction influence nutrient availability
7. Ammonification and nitrification
8. What is Integrated Nutrient Management

**IV Write essay on ANY ONE**

**(1 x 10=10)**

1. Discuss in detail on the major functions of plant nutrients, their deficiency symptoms and management
2. What is nutrient use efficiency .Explain the different ways to improve N,P, and K use efficiency

\*\*\*\*\*