

**KERALA AGRICULTURAL UNIVERSITY**  
**B.Sc (Hons.) Agriculture – 2009 Admission V<sup>th</sup> Semester**  
**Final Examination – January / February 2012**

**Title : Ssac. 3105**  
**Course : Soil Chemistry, Soil fertility and**  
**Nutrient Management (2+1)**

**Marks : 80**  
**Time : 3 Hours**

**I. Fill up the blanks / Match the following / State True or False/Define**

**(10×1=10)**

1. Law of minimum was proposed by
  - a] De Saussure
  - b] Liebig
  - c] Wilfrath
  - d] Gilbert J.H.
2. The nutrient concentration range in which added nutrient will not increase yield but can increase nutrient concentration is called -----
3. Acid sulphate soil rich in pyrite mineral State TRUE or FALSE
4. Magnesium is an important constituent of chlorophyll. State TRUE or FALSE.
5. Elements essential for nitrogen fixation is
  - a] Boron
  - b] Molybdenum
  - c] Manganese
  - d] Nitrogen
6. Increase in soil acidity reduced the availability of
  - a).Molybdenum
  - b). Zinc
  - c). Iron
  - d). Aluminium
7. Khaira disease of rice was caused by
  - a] Phosphorus
  - b] Zinc
  - c] Nitrogen
  - d] Manganese
8. The important organisms for oxidation of nitrite to Nitrate -----
9. Define "Solonetz
10. Define - Exchangeable acidity

**II. Write short notes/ answers etc. on ANY TEN**

**(10×3=30)**

1. Define : Bray's nutrient mobility concept.
2. Write short notes on Essential and beneficial elements
3. Write a note on Acid sulphate soils
4. Define reserve acidity
5. Define neutralizing index
6. Write a note on Gypsum requirement
7. Define RSC
8. Factors influencing Nutrient use efficiency
9. Define denitrification
10. Write a note on Soil organic phosphorus

PTO

11. Write a note on sources of soil acidity
12. Write a note on sources of soluble salts

III. **Write short essays on Any Six of the following**

(6 X 5=30)

1. Briefly explain mechanisms of nutrient uptake in plants
2. Give a brief account of transformation of nitrogen in soil
3. Write a short essay on STCR based fertilizer recommendations to crops
4. Briefly explain biological methods of soil fertility evaluation
5. Write a short essay on genesis of acid soils and reclamation
6. Parameters for assigning the quality of irrigation water
7. Briefly explain Critical level of nutrients in soils
8. Briefly explain about the chemical and biological implications of sulphur cycle in maintaining soil fertility

IV. **Write essays on ANY ONE**

(1X10=10)

1. Explain the role of cationic micronutrients in plant systems
2. Write essay on Integrated nutrient management