



**KERALA AGRICULTURAL UNIVERSITY**  
**B.Tech. (Agrl. Engg.) 2021 Admission**  
**I Semester Final Examination- May 2022**

Sacs.1104

**Principles of Soil Science (2+0)**

**Marks:50**  
**Time: 2 hours**

- I Fill in the blanks (10x1=10)**
1. A vertical section cut downwards through the soil layers is known as .....
  2. Branch of soil science deals with the study of origin and classification of soil is known as .....
  3. Marble is a type of ..... rocks
  4. Kaolinite is a ..... type of clay mineral.
  5. In soil color characterization lightness/darkness is indicated by .....
- State True or False**
6. A soil exhibit the properties as  $EC > 4 \text{ dSm}^{-1}$ ,  $pH < 8.5$  and  $ESP < 15$  is known as saline soil.
  7. Lime is added to reclaim the sodic soils.
  8. Climate is a passive factor of soil formation.
  9. Clay colloid and silica possess negative charges.
  10. Laterization is a process of Fe and Al accumulation in surface soil.
- II Write short notes on ANY FIVE of the following (5x2=10)**
1. Enlist the soil orders and write the characteristic features of any two soil orders of Kerala.
  2. Define the soil texture and enlist the soil textural classes.
  3. Enlist the processes of chemical weathering and explain any two of them.
  4. Write about rocks and its classification.
  5. Explain about soil density.
  6. Describe about soil consistency and its importance.
  7. Distinguish between primary minerals and secondary minerals.
- III Answer ANY FIVE of the following (5x4=20)**
1. Define the cation exchange capacity of soil. Why it is important for soil health?
  2. Describe soil structure and its classification.
  3. Describe the characteristics of sodic soil.
  4. Explain the soil acidity, its types and reclamation of soil acidity.
  5. Describe the soil porosity and its importance.
  6. Explain the characteristic features of organic colloids and their importance.
  7. Explain about lime requirement of acid soils with suitable example.
- IV Write an essay on ANY ONE of the following (1x10=10)**
1. Explain in detail about characteristic features of good quality irrigation water.
  2. Describe in detail about the effect of soil organic matter on soil fertility.

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