

KERALA AGRICULTURAL UNIVERSITY
B.Sc. (Hons.) Agriculture – 2008 Admission - Ist Semester
Final Examination – March/April 2009

Title : Ssac 1101

Max. marks: 80

Course: Introduction to Soil Science (2+1)

Time : 3 hours

I. a). Fill up the blanks

(14x0.5= 7)

1. The study of soils in relation to plant growth is called
2. The free energy of pure water is
3. Outer most 10 miles of the earth is called
4. Presence of Zinc in Apatite mineral is considered asmineral
5. The SI unit of CEC in soils is.....
6. The safe limit of SAR in irrigation water is
- 7..... is a deflocculating cation in soils
8. The scientist who proposed the concept of pH
9. The minimum amount of organic matter that should be present in soil to be designated as organic soil is%
10. The dominant clay mineral that is present in laterite soils.....
11. Among the different common liming materials, the lowest molecular weight is for
12. Marble is metamorphosised from rock
13. Instrument used to study the percolation and leaching losses in soil
14. An estimate of the expected soil loss at any location can be calculated using.....

b). State whether the following sentences are true or false

(6x0.5= 3)

15. Humic acid is soluble in acid only
16. Factors of soil formation have been classified in to Active and Passive factors by Joffee
17. Microbial activities are the main source of CO₂ evolution in soils.
18. Blue Green Algae fix Nitrogen non-symbiotically
19. At low pH values the solubility of micronutrients is at a maximum.
20. Those organic deposits which are slightly decayed or non-decayed are called Peat

II. a). Write the answers in a word or sentence

(10x1= 10)

1. Features of soil taxonomy
2. Cadastral maps
3. Acid sulphate soils
4. Active acidity
5. Permanent wilting point

b). Define the following

6. Aeration capacity of soils
7. Particle Density
8. Muck
9. Stoke's Law
10. Cation Exchange Capacity

III. Write short notes/Answers on ANY TEN of the following

(10x2=20)

1. Weathering of soils
2. Liming in acid soils
3. Deflocculation in soils
4. Thermo metamorphic rocks
5. Humification
6. Non saline alkali soils
7. Gravitational water
8. Soil Profile
9. Soil consistency
10. pF
11. Buffering capacity of soils
12. Soil development

IV. Write short essays on ANY FOUR of the following

(4x5= 20)

1. Cation exchange capacity and nutrient availability in soils
2. Role of organic matter in maintaining soil properties
3. Soil health/quality indicators
4. Classification of rocks
5. Saturated flow of water in soils
6. Hydraulic conductivity

V. Write essays on ANY TWO

(2x10=20)

1. Discuss the various factors of soil formation? What do you mean by soil Catene? What is the difference between soil development and soil formation?
2. What is pH? Discuss the reasons for soil acidity? What are the different forms of acidity in soil? How is acidity controlled?
3. What are the different kinds of soils seen in Kerala? What are the problems associated with these soils? Discuss Laterization in detail.