

KERALA AGRICULTURAL UNIVERSITY
B.Sc. (Hons.) Agriculture – 2009 Admission
1st Semester Final Examination - March 2010

Cat. No. : Ssac 1101

Max. marks: 80

Title : Introduction to Soil Science (2+1)

Time : 3 hours

I. Fill up the Blanks / True or False ANY TEN (10x1=10 Marks)

1. Layer of accumulation is called _____
2. The bulk density of a normal cultivable soil should not exceed _____
3. The difference between upper and lower plastic limit is _____
4. Soil water available at 1/3 atmospheric pressure is _____
5. Montmorillonite is a 2:1 expanding type of clay (True / False)
6. Quarts is a primary mineral (True / False)
7. Apatite contains _____
8. Spheroidal soil structure is found to be the best soils structure (True / False)
9. When a soil is waterlogged for a longer period a permanent _____ condition will develop
10. Soil colour can be determined using _____ colour chart
11. Ability of the soil to conduct water in to the profile is _____
12. The final product of decomposition is _____

II. Write short notes / Answers (Any ten)

(10x3=30 Marks)

1. What are laterite soils? How are they formed?
 2. State the passive soil forming factors and their action on soil weathering process
 3. Define soil structure and list out the types of structure
 4. What is soil pH? Who devised the pH meter?
 5. What are calcareous soils?
 6. What is humus?
 7. List out six beneficial organisms contributing to soil fertility
 8. What is bulk density and particle density?
 9. Differentiate infiltration, percolation and permeability
 10. List out important inorganic soil colloids with their CEC
 11. What is C:N ratio?
 12. What is the role of soil organisms to soil fertility?
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III. Write short Essays on **ANY SIX** of the following

(6x5=30 Marks)

1. List out the three kinds of rocks, their formation and classification
2. What are the active factors of soil formation? What are the roles played by them?
3. Explain a typical soil profile with a diagram
4. Explain stoke's law with its limitations and assumptions
5. What are the factors contributing to soil crusting and how to overcome these conditions?
6. What are the forms in which soil water exists? Explain.
7. What is CEC and how is it important with regard to soil fertility.
8. Write a note on the formation and reclamation of saline soils.

IV Write Essays on **ANY ONE**

(1x10=10 Marks)

1. Narrate in detail the role of organic matter in maintaining the physical and chemical properties of Soil.
2. List out four important soil physical properties with regard to crop growth and yield.