



KERALA AGRICULTURAL UNIVERSITY
B.Sc (Hons.) Forestry 2016 Admission
II Semester Final Examination-August-2017

Bass. 1207

Geology and Soils (1+1)

Marks: 50
Time: 2 hours

I. Fill up the blanks:

(10x1=10)

- 1 The natural process of breakdown and transformation of rocks and minerals into unconsolidated soil material is called as -----
- 2 The solid surface and interior of earth which consists of rocks and minerals is called -----
- 3 The average mineral matter content in well aerated soils is ----- per cent by volume.
- 4 Rocks formed by the solidification of molten magma or volcanic eruptions are called as - -----
- 5 ----- is the dominant mechanism by which exchange of gases takes place between soil air and atmospheric air.
- 6 ----- and ----- from the basic building blocks of silicate clay minerals.
- 7 The weight per unit volume of soil including pore space is termed as -----
- 8 The two crystal units in kaolinite mineral are held together by ----- type of bonding.
- 9 Water held very tightly on the surface of clay particles and practically not available to plants is called ----- type of water.
- 10 The father of Pedology is -----

II Write short notes on any FIVE :

(5x2=10)

- | | |
|-----------------|--------------------------------|
| 1 Rock. | 5 Cohesive and adhesive forces |
| 2 Soil texture. | 6 Pore space and its formula |
| 3 Ion exchange. | 7 Lime requirement |
| 4 Horizonation | |

III Answer any FIVE:

(5x4=20)

- 1 What do you mean by pedogenic processes? Classify, list and explain any five.
- 2 Explain the distinguishing features of forest soils in comparison to agricultural soils.
- 3 Draw neat diagrams of Kaolinite, Montmorillonite, Illite and Chlorite, indicating crystal units, spacing, and bonding. Give important five properties for each of them.
- 4 What do you mean by active and reserve acidity of a soil? Explain with reasons the formation of acid soils.
- 5 What are soil colloids? Classify the soil colloids with examples. List their properties and explain any three properties.
- 6 Formation of sedimentary rocks with examples.
- 7 Total soil water potential and its components.

IV Write essay on any ONE:

(1x10=10)

- 1 What do you mean by active and passive soil forming factors? List them separately and explain all the factors.
- 2 What are saline soils, alkali soils and saline-alkali soils. List their physical and chemical properties. List and explain the cultural and chemical methods to be adopted for the reclamation of saline and alkali soils separately.
