



Registration No: .....

Total Number of Pages : 2 AR-2019

B.Sc (Ag.) 1<sup>ST</sup> SEMESTER EXAMINATIONS (REGULAR),NOV/DEC 2019

AC-111

**FUNDAMENTALS OF SOIL SCIENCE**

Time : 2 Hours

Maximum : 50 Marks

Section A

(Answer all the questions of section A)

Q.1. Fill up the blanks with suitable and meaningful words [0.5×10=5.0]

- a) Slate is a metamorphic rock transformed from -----
- b) Montmorillonite are ----- type of clay minerals.
- c) Soil water tension at permanent wilting point is -----
- d) The most abundant mineral element in the earth crust is -----
- e) The unconsolidated mass over bed rock in soil profile is called -----
- f) Hue, value, chroma terms are associated with soil -----
- g) In earth crust silicon takes place ----- position.
- h) Soil solum refers to ----- horizon.
- i) The logarithm of the negative pressure head in centimetre of water column height is known as -----
- j) Granite and basalt are ----- type of rocks.

Q.2. Define or explain the following in one or two sentence [5×1=5.0]

- a) pedology            b) soil texture
- c) available water   d) bulk density
- e) elluviation

Q.3. Match the following [10×0.5=5.0]

- | A            | B                       |
|--------------|-------------------------|
| i) lake      | i) igneous rock         |
| ii) gravity  | ii) metamorphic rock    |
| iii) biotite | iii) colluvial          |
| iv) apatite  | iv) loess               |
| v) wind      | v) P containing mineral |
| vi) ocean    | vi) sodic feldspar      |
| vii) albite  | vii) marine             |



- viii) limestone
- ix) gneiss
- x) basalt
- viii) black mica
- ix) lacustrine
- x) sedimentary rock

Q.4. Write true or false against the following statements [10×0.5=5.0]

- a) Addition of heavy amount of organic matter improves the texture of a light soil. ( )
- b) Pore space increases with the increase in bulk density of soil. ( )
- c) CO<sub>2</sub> content of soil air is more than that of atmospheric air. ( )
- d) Feldspars are the aluminosilicates of Ca, Na, K. ( )
- e) Granite and basalt are sedimentary rock. ( )
- f) Soil rich in sand have high porosity. ( )
- g) The most resistant minerals in soils are quartz. ( )
- h) Particle density is always greater than bulk density. ( )
- i) Parent material is the active factor of soil formation. ( )
- j) Cation exchange capacity of clays are always lesser than sand or silt. ( )

#### SECTION- B

Attempt any five questions. Each question carries equal marks [5×6=30]

- 5) Define rocks. Classify rocks according to their mode of formation. Briefly describe the process of formation of sedimentary rocks.
- 6) What is different process of weathering? Briefly describe the chemical process of weathering.
- 7) What do you mean by C:N ratio of organic matter and briefly describe its special significance in nitrogen transformation in soil.
- 8) Discuss some important properties of soil colloids and draw the diagram of the unit cell of a 1:1 type minerals.
- 9) What is soil formation? Discuss the passive factor of soil formation.
- 10) Define soil profile. Draw a neat sketch of an ideal soil profile indicating various horizon.