

**End Semester/Reappear (Semester I) Examination December 2022**

**Programme: B. Sc. (Hons.) Agriculture**

**Course: Introduction to Soil Science**

**Course Code: 13A.107**

**Enrollment No: \_\_\_\_\_**

**Full Marks: 50**

**Time: 2 Hrs.**

**Section I**

- 1. Short Answer type questions. Answer any four. 4 x 5 = 20**
- Using a diagram, show the percent contribution of soil components.
  - Compare between symbiotic and non- symbiotic nitrogen fixing bacteria with example.
  - Draw the structure of silicate tetrahedral and magnesium trioctahedral or aluminium dioctahedral.
  - Define soil moisture content. Give a suitable diagram of water availability at different moisture content.
  - Mention the reason of difference in C-axis spacing in 1:1 type clay mineral. Discuss with reference to kaolinite and halloysite.
  - Define and briefly explain bulk density and particle density of soil using their formula.

**Section II**

- Long answer type questions. Answer any two. 2 x 15 = 30**
- Explain three major classes of rocks present on earth crust. Tabulate major elements present on earth crust along with their abundance percent.
  - Define soil texture. Describe the properties of sand, silt and clay. Give size distribution of soil particles under USDA and ISSS classification.
  - Classify the clay minerals based on number of tetrahedral and octahedral layer. Discuss the properties of each type of mineral group with example.
  - Compare between fungi and Actinomycetes. Enumerate the characteristics of yeast and mushroom.

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