

P P SAVANI UNIVERSITY

First Semester of B.Sc. (Hons.) Agriculture End Semester Examination
July - 2022

SGAG 1030-Fundamental of Soil Science

19.06.2022, Tuesday

Time:10:00 a.m. to 12:00 a.m.

Maximum Marks: 50

Instruction:

1. Draw a neat and labeled diagram whenever it is required.
2. Start new questions from new page.

Q.1 Multiple choice questions (01 mark each)

(15)

- 1.1 The origin of soil, its classification and its description are examined in _____.
 - a. Pedology
 - b. Edaphology
 - c. Petrology
 - d. A and B both
- 1.2 Science which deals with the study of the origin of rocks?
 - a. Edaphology
 - b. Pedology
 - c. Petrology
 - d. None of a, b, c
- 1.3 _____ is the process of decomposition of organic matter and synthesis of new organic substances.
 - a. Calcification
 - b. Humification
 - c. Salinization
 - d. All of these
- 1.4 A soil profile contains _____ main horizons.
 - a. Four
 - b. Three
 - c. Two
 - d. One
- 1.5 Horizon _____ is called store house of plant nutrients.
 - a. A
 - b. B
 - c. C
 - d. D
- 1.6 The particle density of soil is always _____ than bulk density in cultivable soil.
 - a. Less
 - b. More
 - c. Equal
 - d. All of these
- 1.7 The attraction between clay and water particles is known as _____.
 - a. Cohesion
 - b. Consistency
 - c. Adhesion
 - d. Plasticity
- 1.8 A field capacity water is held with a force of _____ atmosphere.
 - a. 1/3
 - b. 1/2
 - c. 15
 - d. 10
- 1.9 Condition of soil ,when all large and small pores are filled with water is _____.
 - a. Infiltration
 - b. saturated
 - c. unsaturated
 - d. None of a, b & c

1.10 The water held tightly on the surface of the colloidal particles is known as _____ water.

- a. Gravitational
- b. Capillary
- c. Hygroscopic
- d. A and B both

1.11 The H⁺ atom are attached to oxygen in a water molecule at an angle of _____.

- a. 105
- b. 110
- c. 115
- d. 120

1.12 _____ water is available to plants.

- a. Hygroscopic
- b. Gravitational
- c. Capillary
- d. All of these

1.13 The optimum temperature for the activity of most of the micro - organisms is in the range of _____°C.

- a. 25-35
- b. 35-40
- c. 15-20
- d. 40-45

1.14 The soil environment under the influence of plant roots is called the _____.

- a. Rhizosphere
- b. Atmosphere
- c. Biosphere
- d. Lithosphere

1.15 The smelling of soil in rainy season due to_____.

- a. Actinomycetes
- b. Algae
- c. Fungi
- d. None of these

Q.2 Define/ Explain (Attempt any six- 01 marks each)

(06)

- 2.1 Soil
- 2.2 Soil colloids
- 2.3 Soil structure
- 2.4 Soil colloids
- 2.5 Adhesion
- 2.6 Percolation
- 2.7 Micro-nutrient
- 2.8 Macro-nutrient

Q.3 True/False (01 mark each)

(05)

- 3.1 The bulk density of soil is always less than particle density in cultivable soil.
- 3.2 The attraction between dissimilar particles is known as cohesion.
- 3.3 The micro-pores filled with water and macro-pores filled with air.
- 3.4 Reclamation of acid soil for application of Lime.
- 3.5 The water movement in soil surface is infiltration.

Q.4 Short notes (Attempt any six- 02 marks each)

(12)

- 4.1 Explain components of soil with diagram?
- 4.2 Explain soil porosity?
- 4.3 Enlist type of soil structure?
- 4.4 Explain soil colour?
- 4.5 Enlist the Physical Property of soil?
- 4.6 Enlist Factor affecting soil water?
- 4.7 Explain Classification of soil pH?
- 4.8 Explain source of soil organic matter?

Q.5 Answer the following questions in detail (Attempt any three- 04 marks each)

(12)

- 5.1 Write the Physical and Biological classification of soil water in details?
- 5.2 Enlist chemical weathering of rocks and explain Carbonation Process?
- 5.3 What is Soil forming factors and Explain Jenny (1941) formulated the following equation?
- 5.4 What is soil pH and enlist factor controlling soil pH and importance of soil pH?
- 5.5 What is soil organic matter and enlist factor affecting soil organic matter?
