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GIET UNIVERSITY, GUNUPUR – 765022
B. Sc. (Ag.) (First Semester) Examinations, March – 2023
AC – 111 - Fundamentals of Soil Science

Time: 2 hrs

Maximum : 50 Marks

The figures in the right hand margin indicate marks.

PART – A

Q.1. Fill in the blanks with suitable word / figure. (0.5 x 10 = 5 Marks)

- a. ----- is known as Father of Soil science.
- b. ----- nutrient is helpful for aggregating the soil particles.
- c. ----- horizon is called Illuvial horizon.
- d. A + B horizon = -----.
- e. Acid soil can be managed by application of -----.
- f. The no. of Master horizon in Soil profile is -----.
- g. ----- introduced the pF scale.
- h. Natural aggregates are called.....
- i. The Bulk density of a soil in the range of -----
- j. ----- soil structure is good for agriculture.

Q. 2. Define (or) Explain the following in one or two sentences. 1 x 5 = 5 Marks)

- a. Define C:N ratio.
- b. What is Denitrification process
- c. What is Edaphology.
- d. Write down 2:1 clay mineral with example.
- e. Define Darcy's law.

Q3. Match the following (0.5 x 10 = 5 Marks)

Column – A		Column – B	
(a)	Smallest volume of soil	(i)	Bacteria
(b)	Active factor of soil formation	(ii)	Mass flow
(c)	Gilgai microrelief	(iii)	Pedon
(d)	Microflora	(iv)	Sedimentary rock
(e)	Gaseous exchange	(v)	Vertisol
(f)	Phyllosilicate mineral	(vi)	Dissimilar particle
(g)	Anion exchange capacity	(vii)	Climate
(h)	Lime stone	(viii)	PO ₄ ³⁻
(i)	Adhesion	(ix)	Solonetz
(j)	Alkali soil	(x)	Kaolinite

Q4. Write True or False against each statement

(0.5 x 10 = 5 Marks)

- a. Phyllosilicate is widely found in soil.
- b. Natural aggregates are called as clod.
- c. The bulk density of soil increases by addition of organic matter.
- d. Major amount of P & K movement in soil by Diffusion process.
- e. Sedimentary rocks make up 5% of the earth crust.
- f. Humic acid is the insoluble fraction of humus.
- g. The soil water potential at Field capacity is -0.33 bar.
- h. Olivine is resistant to weathering.
- i. Vermiculite clay mineral having highest Cation exchange capacity.
- j. Fungi population more in acidic soil.

PART – B

Attempt ANY FIVE questions. All question carries equal marks

(6 x 5 = 30 Marks)

5. What is soil profile? Write about its horizons.
6. Briefly describe about the Fundamental process of Soil formation.
7. What is Soil water. Write the different type of losses of water in soil.
8. Write about the importance of organic matter in soil.
9. What is Soil acidity. Write its Sources & management practices.
10. Write about the Soil groups of India.

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