



## **BRAINWARE UNIVERSITY**

Term End Examination 2023-2024 Programme - B.Sc.(Ag)-Hons-2022/B.Sc.(Ag)-Hons-2023 Course Name - Fundamentals of Soil Science-II Course Code - CC-BAG280(T) (Semester II)

Time: 2:0 Hours Full Marks: 50 [The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

**Group-A** 

(Multiple Choice Type Question)

1 x 20=20

- 1. Choose the correct alternative from the following:
- (i) Choose the correct option: The soil particle size less than <0.001 mm is called a) Soil Colloid b) Clay d) Boulder c) Stone (ii) Which of the following correct option: The continuous rapid zigzag movement executed by a colloidal particle in the dispersion medium is called a) Brownian movement b) Tyndal effect d) Adsorption c) Plasticity (iii) Which of the following correct option: The product of decomposition of plant animal residues is called a) FYM b) Manure c) Humus d) Paleo hummus (iv) Choose the correct option: Aggregation or clumping together of individual, tiny soil particles is called a) Flocculation b) Deflocculation c) Tyndal effect d) Adsorption
- (v) What is the sources of negative charge in silicate clays are
- - a) Exposed edges b) Isomorphous substitution c) Anion exchange d) All of these
- (vi) The phenomenon by which increase in concentration or accumulation of an ion on solid surface is called
  - a) Absorption b) Adsorption c) Plasticity d) Cohesion

(vii) Show the correct option: In alkali soil	most dominant cation is
a) Ca +2 c) Na+	b) Mg +2 d) Al+3
(viii) What is the Unit of CEC	
a) mole per lit c) None of them (ix) Show the correct entire Permanana	b) C mol (p+) kg-1 d) cm3 nt charge on clay surface developed due to
	b) Cohesion
<ul> <li>a) Adhesion</li> <li>c) Isomorphous substitution</li> <li>(x) Show the correct option: The humus</li> </ul>	d) Adsorption
a) Fulvic acid c) Humin	b) Humic acid d) Hymatomelanic acid fraction insoluble both in acid and alkali is
a) Fulvic acid c) Humin	<ul><li>b) Humic acid</li><li>d) Hymatomelanic acid</li></ul>
(xii) Choose the correct option: Generally	
a) Increase     c) No change (xiii) Which one of the following:For dete	b) Decrease d) First decrease later increase rmination of CEC we prefer
<ul> <li>a) Ammonium acetate</li> <li>c) sodium chloride</li> </ul>	b) ammonium hydroxide d) potassium per manganate value which is most conducive for the availability of
a) 6.5-8.5	b) 6.5-9
c) 6.5-7.5	d) 44811
(xv) Which one of the following:CEC on v	volume basis highest for
<ul><li>a) Vermiculite</li><li>c) Kaolinite</li></ul>	b) Montmorillonite d) Illite
(xvi) Show the correct option:P fixation is	s more in
<ul><li>a) montmorillonite</li><li>c) kaolinite</li></ul>	b) Vermiculite d) Illite
(xvii) The minerals in which two tetrahed is known as	ral sheet and 1 octahedral sheet form the crystal unit
a) 2:1minerals c) 2:2minerals (xviii) Show the correct option: Most wide	b) 1:1minerals d) trimorphic minerals ely occuring, simplest clay mineral in soils is
a) Montmorillonite     c) Vermiculite	b) Kaolinite d) Illite
(xix) When Aluminium is surrounded by	
<ul><li>a) Tetrahedral sheet</li><li>c) Brucite layer</li><li>(xx) Choose the correct option: Domina</li></ul>	b) Octahedral sheet d) Aluminium sheet
a) CaCl2	
c) NaHCO3	b) Na2CO3 d) MasO4

Group-B

(Short Answer Type Questions)	2.5 x 10=25
<ol> <li>Explain the term Ammonification</li> <li>What is C/N ratio</li> <li>What is the practical implications of the C/N ratio</li> <li>What is C/N ratio for Mineralization and Immobilization process</li> <li>Explain the affect of soil by the application of organic matter</li> <li>What is humus and explain its components</li> <li>Explain the term "Eutrophication"</li> <li>Explain the type of soil colloids</li> <li>Explain the buffering capacity of soils</li> <li>Explain how to control soil pollution</li> </ol>	(2.5) (2.5) (2.5) (2.5) (2.5) (2.5) (2.5) (2.5) (2.5)
OR  Explain the Iron or Aluminium ion efefcts in soil acidity (give the real	action) (2.5)
Group-C (Long Answer Type Questions)	5 x 1=5
12. Explain the Kind of soil Acidity OR	(5)
Explain the Difference between organic matter and humus	(5)