



BRAINWARE UNIVERSITY

Term End Examination 2023-2024 Programme – B.Sc.(Ag)-Hons-2022 Course Name - Problematic Soils and their Management **Course Code - CC-BAG401** (Semester IV)

Full Marks: 50 Time: 2:0 Hours [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

1 x 20=20

- (Multiple Choice Type Question) Choose the correct alternative from the following: (i) What will be the nature of soil, if parent material is granite? a) Acidic in nature b) Basic in nature c) Neutral in nature d) Calcareous in nature (ii) The acidity which is developed due to H+ and Al3+ ions in soil solution is called a) Active acidity b) Potential acidity c) Residual acidity d) Total acidity (iii) What should be the depth of soil for Lime recommendation? a) 2 inches b) 4 inches c) 6 inches d) 12 inches (iv) Which of the following is pH measures a) Active acidity b) Exchangeable or small replaceable acidity c) Residual acidity d) Total acidity (v) Which is not a liming material for acid soil reclamation? a) Gypsum b) Burnt lime c) Slaked lime d) Calcite and Dolomite (vi) If there is increasing in temperature, moisture and carbon di oxide, what will be the liming reaction
 - a) Increase

b) Decrease

c) No change in reaction

- d) Initially decrease later increase
- (vii) What is the Calcium Carbonate Equivalent (or) Neutralizing value (N.V) of CaO is
 - a) 169

b) 170

c) 179

- d) 180
- (viii) Which of the following sieve having 100% efficiency for liming
 - a) 60 mesh

b) 20 mesh

c) 08 mesh

- d) 50 mesh
- (ix) What will be very active bacteria in acid sulphate soils if pH become below 4?

1	a) Thiobacillus thiooxidansc) Thiobacillus denitrificansx) The process by which alkali soil or sodic soil wil	b) Thiobacillus ferroxidans d) Bacillus I develop	
	a) Alkalization c) Gleization ki) What is the another name of Sodic soils ?	b) Salinization d) Pedoturbation	
(x	a) Black alkali soilsc) Kallar soilsii) Which define the Sodicity of irrigation water?	b) Usar soils d) All the these	
l	a) Base saturation c) AEC iii) What is the term by which salinity is measured	b) SAR d) CEC ?	
	a) EC c) AEC iv) EC of irrigation water is 4 and EC of drainage water	b) pH d) CEC ater is 2 then what is the leaching	
(x	a) 100 c) 150 v) By which formula Exchangeable Sodium Percer	b) 200 d) 250 stage (ESP) can be calculate ?	
	 a) [Exchangeable Na/CEC] x 100 c) [Exchangeable Na/AEC] x 100 vi) What is the value of RSC (me/L) in irrigation was 	b) [Exchangeable Na/CEC] x 10 d) [Exchangeablebases/CEC] x 100	
	a) <2.5 c) <3.0 rii) Choose the Safe limit for Residual Sodium Carb	b) >2.5 d) >1.5	
	a) <1.25 c) 1.75 iii) Which of the following is called Removal of exc	b) 1.5 d) 2	
	 a) Leaching c) Laterization x) When the sensing device detects EMR (Electro another source, primarily from sun is called 	b) Drainaged) Podzolization	
(x)	a) Active Sensing c) Both Active and Passive d) What of the following Colour for the Land Capa	b) Passive sensing d) EMR sensing ability Class-II on LCC maps is	
	a) Yellow c) Blue	b) Red d) Green	
	Grou	р-В	2.5 x
	(Short Answer Ty	pe Questions)	10=25
3. 4. 5. 6. 7. 8. 9.	Elaborate the reason of Soil Acidity development Explain the Iron or Aluminium ion efects in soil a Explain the names of liming material Explain the factors that relate the efficiency of lin Illustrate the term Neutralizing value or CCE Classify the difference between Lime requirement Explain the term Neutralizing value or CCE How to develop Soil Acidity by the use of acidic for Estimate the leaching requirement (LR) of an irrigation of the Neutralizing conductivity of drains	cidity (give the reaction) ning materials at and Liming factor ertilizer gation water having electrical conductiv	(2.5) (2.5) (2.5) (2.5) (2.5) (2.5) (2.5) vity (2.5)
10.	Estimate the leaching requirement (LR) of an irrig of 3 ds/m. When electrical conductivity of draina	gation water having electrical conductiv	rity (2

11. Discuss the acid soil distribution in India OR	(2.5)		
Discuss the reason of Fe or Mn toxicity development in acid soil.	(2.5)		
Group-C			
(Long Answer Type Questions)	5 x 1=5		
Explain the principles of liming reaction OR	(5)		
Explain the term "Land capability classification"	(5)		
