



End Semester/Reappear (Semester I) Examination December 2024

Programme: M. Sc. (Ag.) Agronomy

Course: Soil Chemistry

Course Code: 13A.SS.501

Enrolment no. _____

Full Marks: 50

Time: 2 Hrs.

Q.No.	Questions	CO	Bloom Taxonomy Category	Marks
Section I				
1	Short Answer type questions.			4 x 5 = 20
a	Define soil organic matter. Explain the factors affecting soil organic matter.	CO1	Remember	
	or			
b	Describe the properties and nature of soil colloids	CO1	Understand	
	Mention out the significance of cation exchange capacity.	CO2	Understand	
	or			
c	Enlist the factors affecting ion exchange capacity in soil.	CO2	Remember	
	Compare between nitrification and denitrification.	CO3	Understand	
d	or			
	Discuss nutrient deficiency and their toxicity symptoms.	CO3	Understand	
d	State amendments of acid soil and alkaline soils.	CO4	Remember	
	or			
	Describe active and potential acidity.	CO4	Understand	
Section II				
	Long Answer type questions.			2 x 15 = 30
2	a. Compare between 1:1 clay mineral and 2:1 clay mineral.	CO2	Understand	
	b. Analyze the theory of law of mass action (Kerr-Vanselow). Explain adsorption isotherms.	CO2	Analyze	
	or			
	a. Describe adsorption isotherms in brief.	CO2	Remember	
3	b. Conclude cation exchange theory. Summarize the importance of ion-exchange in nutrient availability in soil.	CO2	Analyze	
	a. Enlist the factors affecting ammonium availability.	CO3	Remember	
	b. Explain phosphorus transformation in soil. Enlist factors affecting phosphorus availability.	CO3	Analyze	
	or			
	a. Enlist factors affecting potassium availability.	CO3	Remember	
	b. Analyse precipitation –dissolution equilibrium, their steps and constant –rate K. Recommend its management aspects.	CO3	Analyze	