JHARKHAND Rai University
RANCHI

End Semester/Reappear (Semester V) Examination December 2024

Programme:B. Sc. (Hons.) Agriculture

Course:Manures, Fertilizers and Soil Fertility Management **Full Marks: 50**

Course Code:13A.312 **Time: 2 Hrs.**

Enrolment no. _____

Q.No.	Questions	CO	Bloom Taxonomy Category	Marks
	Section I			
1	**Short Answer type questions.**			**4 x 5 = 20**
a	Compare between low analysis and high analysis fertilizer with suitable examples.	CO1	Understand	
	or			
	Define vermicompost. Explain briefly the method of preparation with appropriate species .	CO1	Remember	
b	What are the available form and sources of nitrogen to crop? Classify nitrogenous fertilizers with examples and mention their nutrient content in them.	CO2	Remember	
	or			
	What are fertilizers? Give a detail classification of fertilizers based on their nutrient content in them.	CO2	Remember	
c	Discuss criteria of essentiality of nutrient to plants. Make a chart of different groups of plant essential nutrient.	CO3	Understand	
	or			
	Classifiy the essential elements according to their mobility in plant and soil.	CO3	Understand	
d	Enlist indicator plants of different nutrients.	CO2	Remember	
	or			
	Explain the different methods of testing of macro element in soil along with the name of scientists.	CO2	Understand	
	Section II			
Long Answer type questions.				**2 x 15 = 30**
2	a. Classify phosphatic fertilizers with examples based on their solubility. What are the general properties of different groups of phosphatic fertilizer.	CO2	Analyze	
	b. Discuss benefits of using nano-fertilizers.	CO2	Remember	
	or			
	a. Explain the beneficial effects of liming in acidic soil. Why gypsum is not used as liming material for acidic soil?	CO2	Analyze	
	b. Explain the industrial manufacturing of urea.	CO2	Understand	
3	a. Explain the mechanisms of nutrient transport to plants from soil. What are the factors affecting the process of nutrient transport in soil	CO3	Analyze	
	b.Compare rapid tissue and DRIS method of soil fertility evaluation.	CO3	Understand	
	or			
	a. Calculate the fertilizer requirement of a crop which require 120Kg, 40 Kg, 60 kg of NPK respectively using DAP,Urea and MOP only.	CO3	Evalaute	
	b. How soil fertility is different from productivity?	CO3	Understand	

Course Outcome:

CO1 Know about fertilizers and manures as sources of plant nutrients and apprise about the integrated approach of plant nutrition and sustainability of soil fertility.

CO2 Comprehendthe requirements of manures and fertilizers for various crops and their proper time of application.

CO3 Understand how the soil fertility and productivity can be maintained for better crop production.