JHARKHAND Rai University
RANCHI

End Semester/Reappear (Semester II) Examination May 2025

Programme:B. Sc. (Hons.) Agriculture

Course:Agricultural Microbiology **Full Marks: 50**

Course Code:13A.152 **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	Sketch a neat and well labelled diagram of bacterial cell	CO1	Apply	
	or			
	Compare between prokaryotic and eukaryotic cells with suitable examples.	CO1	Understand	
b	Explain schematic representation of Sulphur Cycle.	CO2	Understand	
	or			
	Illustrate Nitrogen Cycle with the help of a suitable flowchart.	CO2	Apply	
c	Based on your understanding illustrate various factors affecting rhizosphere effect.	CO3	Apply	
	or			
	Define mycorrhiza. Mention briefly various types of mycorrhiza.	CO3	Remember	
d	Discuss advantages and limitation of biofertilizer.	CO4	Understand	
	or			
	Illustrate factors which enhance the nutrient quality of silage.	CO4	Apply	
	Section II			
Long Answer type questions.				**2 x 15 = 30**
2	a.Enlist and explain the contribution of five scientists in the evolution of microbial world.	CO1	Analyze	10
	b. Define agricultural microbiology. Explain its scope and significance.	CO1	Analyze	5
	or			
	a. Conclude briefly on i.Spontaneous generation theory ii.Photo autotrophy iii.Gram Negative Bacteria d.Chemoautotrophy	CO1	Analyze	10
	b. Briefly explain bacterial cell structure its part and their function.	CO1	Understand	5
3	a. Define silage. Explain steps for silage making and also write judging quality parameters of silage	CO4	Analyze	10
	b.Define biofertilizer. Evaluate different types of biofertilizer on the basis of their effictiveness.	CO4	Evaluate	5
	or			
	a. Define biopesticide and explain types of biopesticides in detail.	CO4	Analyze	10
	b. Define bioethanol and biodiesel. Enumerate their advantages and disadvantages.	CO4	Understand	5

Course Outcome:

At the end of the course the student will be able to:

CO1Understand the basics of agricultural microbiology, pure culture, microbial association, soil fertility, symbiotic, associative and asymbiotic of microbes, bio-fertilizers, biopesticides, bio- degradation, etc.

CO2 Know about the production and use of beneficial microorganisms in agriculture, industries and maintenance of microorganisms in water, soil, food ad ecosystem.

CO3Use equipment, laboratory tools, glassware, etc. for isolation, identification, preservation, classification and utilization of useful microbes.

C04 Apply skills to qualify for broad range of position in research, industry, consultancy ,education and public adminstation, or for further education in master's programme.