JHARKHAND Rai University
RANCHI

End Semester/Reappear (Semester II) Examination May 2025

Programme:B. Sc. (Hons.) Agriculture

Course:Soil and Water Conservation Engineering **Full Marks: 50**

Course Code: 13A.261 **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	Illustrate the control measures for gully erosion based on its dimension.	CO1	Apply	
	or			
	Compare between rill and gully erosion with respect to interruption offered to agricultural operations.	CO1	Understand	
b	Explain mathematical equation of soil erosion and USLE and compare between them.	CO2	Understand	
	or			
	Calculate annual soil loss by USLE for a clean tilled (c=1), and fallow land (p=1), with slope=7%, soil erodibility (K=1), slope length=27.5m, rainfall erosivity=150 mm (use topographic factor = 0.4).	CO1	Apply	
c	Explain contour stonewall and its importance.	CO3	Understand	
	or			
	Explain grassed waterways. Illustrate its advantages and disadvantages.	CO3	Remember	
d	Discuss vegetative barriers. List purposes of using vegetative barriers. Estimates secondary benefits associated with it.	CO2	Understand	
	or			
	Compare between windbreak and shelter break with a suitable diagram.	CO2	Understand	
	Section II			
Long Answer type questions.				**2 x 15 = 30**
2	a. Review the distribution and estimation of reservoir sedimentation. Discuss the factors affecting the sedimentation of reservoirs.	CO3	Evaluate	10
	b.Describe land capability classification. Discuss salient features of Land Capability Classes.	CO3	Remember	5
	or			
	a. Explain rate of reservoir sedimentation. Discuss reservoir sedimentation control measures.	CO3	Evaluate	10
	b. Analyse factors of gully control according to its principles.	CO3	Analyze	5
3	a. Explain classification of gullies on the basis of shape ,dimension and stages of development. Outline soil loss equation and USLE along with its factors.	CO1	Analyze	10
	b. Evaluate various factors affecting soil erosion.	CO1	Evaluate	5
	or			
	a. Explain geological and anthropogenic agent of soil erosion. Compare geological and accelerated soil erosion.	CO1	Analyze	10
	b. Explain different stages of gully erosion and classify them based on various parameters.	CO2	Analyze	5

Course Outcomes:

At the end of the course the students will be able to

CO1 Comprehend soil, water and wind erosion and develop understanding of their causes, classification and stages.

CO2 Estimation soil and water erosion and suggest engineering and agronomical measures along with layout and designs to control them.

CO3 Understand different engineering measures to control wind erosion. Compute soil erodibility index in soil loss estimation.