JHARKHAND Rai University
RANCHI

End Semester/Reappear (Semester III) Examination December, 2024

Programme:B.Tech (MiE)
Course:Basic Mine Surveying **Full Marks: 70**
Course Code: 8PCCMiE203 **Time: 3 Hrs.**
Enrolment no. _____

Q.No.	Questions	CO	Bloom Taxonomy	Marks
	Section I			
1	**Short Answer type questions.**			**4 x 5 = 20**
a	Describe different kinds of chains and tapes used for linear measurements.	CO1	Remember	
	or			
	Classify surveying on the basis of Land and instruments used.	CO1	Understand	
b	Write the different methods of measuring horizontal angle through theodolite.	CO2	Understand	
	or			
	Define Traverse survey. Explain types of traverses.	CO2	Remember	
c	List the accessories used in the plane table surveying. How plain alidade is different from telescopic alidade?	CO3	Understand	
	or			
	Explain plane table surveying. What is the principle of plane table surveying?	CO3	Remember	
d	Explain the terms in brief: Contour line, Contour interval and horizontal equivalent. Also write the characteristics of contour line.	CO4	Remember	
	or			
	Explain the bench mark and its types.	CO4	Apply	
	Section II			
Long Answer type questions. Answer any three.				**3 x 10 = 30**
2	Classify the different types of chains used in surveying? Draw neat diagram of metric chain.	CO1	Understand	
	or			
	Explain obstruction in chaining with example. what is slope correction obtain the relation.	CO1	Understand	
3	A steel tape was exactly 30m length is standardized at temperature 25°C at a pull of 20 kg. If 9the measurement of one tape length is taken at 39°C at a pull of 36kg. then find the combined correction due to temperature, pull and sag using following data; -E= 2.1 X10^6 Kg/cm^2, A=0.3cm^2, w=30gm/m, Coefficient of thermal expansion =12x10^6/°C.	CO3	Evaluate	
	or			
	Explain Local Attraction. Discuss the process of removal of Local attraction from station.	CO3	Analyze	
4	Extract the Applications and modern developments of the Total Station Instrument.	CO4	Understand	
	or			
	Explain the different components of theodolite also draw the fundamental lines in theodolite.	CO4	Analyze	
	Section III			
	Application based questions.			
	The following staff readings were observed successively with a level. the instrument having been moved after third, sixth and eighth readings: 2.228 ; 1.606 ; 0.988; 2.090: 2.864; 1.262; 0.602; 1.982; 1.044 ; 2.684 meters. Enter the above readings in a page of a level book and calculate the R.L. of points if the first reading was taken with a staff held on a bench mark of 432.384 m. Use Rise and fall method.	CO2	Evaluate	
	or			

5	The following readings were taken with a dumpy level. The first reading were taken on benchmark of 820.765m, the readings obtained being as shown below. Obtain the R.L and height of instrument, Use Hight of Instrument method.	CO1	Evaluate	**1 x 20 = 20**

BS	IS	FS	RL	REMARKS
0.794			820.765	BM
	1.543			
	2.796			
0.854		2.916		CP 1
	0.592			
	0.482			
1.432		0.151		CP 2
	0.896			
		2.035		

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Course Outcome:

On the completion of the Course, the students will be able to:

CO1 Enhance the technical knowledge on linear measurements by chain surveying & tape surveying, compass surveying and plane table surveying.

CO2 Identify and evaluate the engineering problems in levelling and angular measurements with various surveying tools likes theodolite, levels etc.

CO3 Apply the use of Total Students & EDM in field and concept of contour.

CO4 Understand the application of plan table survey and modern engineering tools necessary for mine surveying.