B.Sc.-III (CBCS Pattern) Semester - VI CHT13 - Chemistry Paper-I : Discipline Specific Elective Chemistry-V (Inorganic Chemistry)

P. Pages : Time : Thr			GUG/S/23/13341 Max. Marks : 50	
1.	a)	Explain the techniques of automization and sample introduction in flame photometry.	5	
	b)	What is error? Explain the determinate and indeterminate error in detail.	5	
		OR		
	c)	Describe the Q-test for the rejection of data. Calcium hardness of water sample was determined four times as 101, 103, 99, 115 mg/L. Predict on the basis of Q-test whether the value 115 can be rejected if the value of Q is 0.829 at 95% confidence level.	21/2	
	d)	Write difference in precision and accuracy.	21/2	
	e)	Discuss the limitation of flame photometry.	21/2	
	f)	Explain choice of flame and Burner designs in flame photometry.	21/2	
2.	a)	Explain the methods of analysis for the following in details. i) Soil pH ii) Organic carbon	5	
	b)	Discuss the technique and application of paper chromatography?	5	
		OR		
	c)	Explain the methods for the collection of soil samples.	21/2	
	d)	Explain the types of ion-exchange resins.	21/2	
	e)	Discuss Advantages and disadvantages of chemical fertilizer.	21/2	
	f)	Give principle and classification of solvent extraction.	21/2	
3.	a)	Define organometallic compounds? Discuss the classification organometallic compound in detail.	5	
	b)	Explain the following-i) Bioinorganic nanomaterialii) Silver nanomaterial	5	
		OR		
	c)	Write on homogeneous hydrogenation.	21/2	

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	d)	Explain the method for the preparation of gold nanoparticle.	21/2
	e)	Write the note on inorganic nanotubes.	21/2
	f)	Discuss the any two methods for the preparation of alkyl and aryl of tin.	21/2
4.	a)	Explain the following for water treatment and purification.i) Electro dialysisii) Reverse Osmosis	5
	b)	Discuss the sources and nature of water pollutants.	5
		OR	
	c)	Mention the water quality parameter for the industrial water and domestic water.	21/2
	d)	Discuss the impact of water pollution on ecosystem.	21/2
	e)	Write a note on hydrological cycle.	21/2
	f)	Explain ion-exchange method for water purification.	21/2
5.		Solve any ten.	10
		i) Write application of flame photometry.	
		ii) Choice of source in flame photometry.	
		iii) Write a short note on monochromator used in the flame photometry.	
		iv) Write a note on entisols.	
		v) Define ion exchange capacity.	
		vi) What is column chromatography.	
		vii) Name of following organometallic compound a) $CH_3 - Mg - Br$ b) $(C_6H_5)_2 - Hg$	
		viii) Define Nanomaterials.	
		ix) Write application of alkyl alluminium.	
		x) Note on incineration of waste.	
		xi) What is sludge disposal.	
		xii) What are the water resources.	
