## M.Sc.(Chemistry) Fourth Semester OLD MSC2434-4-Elective - Polymer Chemistry

P. Pages : Time : Th		2 GUG/W/18/2   iree Hours * 1 9 1 6 *   Max. Marks	GUG/W/18/2449 Max. Marks : 80	
1.	a)	What is ionic polymerization? Derive the rate equations for cationic polymerization.	8	
	b)	Distinguish between addition and condensation polymerization.	8	
		OR		
	c)	Derive an expression for rate of free realized polymerization.	4	
	d)	Write a note on electro polymerization.	4	
	e)	Explain the types of polymerization.	4	
	f)	Explain the chain polymerization.	4	
2.	a)	What are Ziegler and Natta catalysts? Discuss the mechanism involved in Ziegler – Natta polymerization.	8	
	b)	Explain the technique of bulk polymerization.	8	
		OR		
	c)	Write a note on interfacial polymerization.	4	
	d)	Explain the technique of emulsion polymerization.	4	
	e)	Write a note on co-ordination polymerization.	4	
	f)	What is the suspension polymerization?	4	
3.	a)	Explain applicability of NMR with respect to polymer characterization.	8	
	b)	Write principle, working and application of TGA.	8	
		OR		
	c)	Write preparation and properties of a graft co-polymers.	4	
	b)	Explain the block Copolymerization.	4	
	e)	How is IR method used in characterization of polystyrene?	4	
	f)	Discuss DSC method for characterization of polymers.	4	

4.	a)	Give the synthesis and application of co-ordination polymers.	8
	b)	Write the use of biomedical polymers in artificial heart, Kidney and skin.	8
		OR	
	c)	Explain the synthesis & application of silicones polymers.	4
	d)	Write a note on phosphorus polymer.	4
	e)	Describe the dental polymers.	4
	f)	Give a brief account of biopolymers with reference to contact lens.	4
5.	a)	What is the ring – opening polymerization.	2
	b)	Explain stereospecific polymerization.	2
	c)	Describe random polymerization.	2
	d)	What is the step polymerization.	2
	e)	What is glass transition temperature of polymer.	2
	f)	Explain preparation of polyethylene.	2
	g)	Write two structures of polyphosphates.	2
	h)	What is the biomedical polymer of skin?	2
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