Q. P. Code : 27733

[Time : 3 hours] **[Marks : 80]**

N.B. (1) Question No 1 is compulsory

(2) Attempt any three questions out of remaining five questions

(3) Assumption made, if any should be clearly stated

(4) Figures to the right indicate full marks.

Q 1		Explain briefly	20
	(a)	Factors influencing Polymer Properties.	
	(b)	Viscoelasticity of Polymer.	
	(c)	Autoacceleration.	
	(d)	Natural polymer Rosin.	
Q 2	(a)	Explain with flowsheet manufacturing of Polyethylene with properties and application.	10
	(b)	Explain in detail thermal polymer degradation with relevant examples	10
Q 3	(a)	Derive the rate equation for addition Co-Polymerisation. Explain how does reactivity ratio controls the rate of copolymerization.	12
	(b)	Explain in detail classification of Polymers with examples.	08
Q 4	(a)	Explain in detail suspension polymerization technique with advantages , disadvantages and industrial examples.	10
	(b)	Distinguish between Engineering polymers and specialty polymers.	05
	(c)	Explain Kinetics of Step Growth Polymerization.	05
Q 5	(a)	Explain in detail various post polymerization unit operation for polyester manufacturing.	10
	(b)	Explain in brief the injection moulding process for thermoplastic materials.	10
Q 6	(a)	What are the various ways of expressing molecular weight of Polymers? Derive an expression for finding the weight average molecular weight.	10
	(b)	Explain with examples the role of the following compounding ingredients in polymers. i) Plasticizers ii) Fire Retardants	10

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