GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-III • EXAMINATION - WINTER 2013

Subject Code: 132804 Date: 26-11-2013

Subject Name: Polymer Chemistry

Time: 02.30 pm - 05.00 pm **Total Marks: 70**

Instructions:

- 1. Attempt all questions.

		ake suitable assumptions wherever necessary. gures to the right indicate full marks.	
Q.1	(a)	Answer the following objective questions.	10
	i)	Name the raw material of polyvinyl alcohol.	
	ii)	Give one example of antioxident.	
	iii)	Natural rubber is obtained from of rubber tree.	
	iv)	The vulcanization process was discovered by	
	v)	State one example of thermosetting polymer.	
	vi)	Give one example of coordination polymerization.	
	vii)	In nylon 66, what does the first digit '6' indicates?	
	viii)	With polymers we can carry out a substitution reaction.	
	ix)	Thermocoal is nothing but	
	x)	Viscosity average molecular weight is determined by equation.	
Q.2	(b) (a)	Discuss blow moulding process. What is weight average molecular weight and number average molecular	04 07
		weight? Determine $Mn = \frac{\sum niMi}{\sum ni}$, $M_w = \frac{\sum niMi^2}{\sum niMi}$	
	(b)	Discuss the recycling and biodegradation of polymers. OR	07
	(b)	Explain end group analysis in detail.	07
Q.3		Describe the manufacturing, properties and applications of polyacrylamide OR	14
Q.3	(a)	Give synthesis, properties and applications of phenol formaldehyde resins	07
	(b)	What is polymerization? Explain emulsion polymerization in detail.	07
Q.4	(a) (b)	Explain geometry of polymers in detail. Discuss Chain polymerization reaction mechanism in detail. OR	07 07
		UK	

- Describe production, properties and application of polymethyl methacrylate. **Q.4** (a) **07** Describe various techno-chemical aspects of PVC. **07 (b)**
- Describe the manufacturing, properties and applications of LDPE. 14 **Q.5**

Q.5 (a) Describe properties and applications of polystyrene and its different co-polymers. **07** Describe the chemistry and applications of any two cellulose derivatives. **07 (b)**
