Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV • EXAMINATION – SUMMER 2013

Subject Code: 142801 **Date: 07-06-2013**

Subject Name: Manufacturing and Applications of Polymeric Material

Time: 10:30am – 01:00pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Answer the following objective questions.	**10**
	i.	Show the reaction scheme of DHEU.	
	ii.	What is difference between UF precondensate and DMU?	
	iii.	----------resins are prone to chlorine damage.	
	iv.	What is difference between silicon and silicone?	
	v.	What is meaning of FH and PH grades of PVA?	
	vi.	Printing binders are generally prepared by _____ polymerization.	
	vii.	Name two initiators, one for aqueous and one for non aaueous system of polymerization.	
	viii.	Print table adhesives normally based on _____ polymers.	
	ix.	What is compact normal PVC?	
	x.	Polyethylene possesses good chemical and UV resistance, true or false? Correct if false.	
	(b)	State various draw backs of DMU.	**04**
Q.2	**(a)**	Describe various manufacturing processes of U.F. precondensate.	**07**
	(b)	With flow chart and recipe, describe the manufacturing of PVC by suspension polymerization.	**07**
		OR	
	(b)	Describe various techno-chemical aspects of silicone fluids.	**07**
Q.3	**(a)**	Discuss, textile applications of polyvinyl chloride.	**07**
	(b)	Describe the chemistry and applications of M.F. pre condensate.	**07**
		OR	
Q.3	**(a)**	Describe the manufacturing and applications of DMDHEU.	**07**
	(b)	Give the method for synthesis of polysol.	**07**
Q.4	**(a)**	What is superabsorbant? What are its applications? Describe the method for preparation of super absorbent polymer.	**07**
	(b)	Discuss about the chemistry, properties and various grades of Polyvinyl alcohol. Also discuss its application in textile finishing.	**07**
		OR	
Q.4	**(a)**	Discuss about the suitability of polyacrylate polymers as printing binders and sizing agent.	**07**
	(b)	Throw light on chemistry of ethylene oxide condensation products. Discuss their properties and textile applications.	**07**
Q.5	**(a)**	Describe in detail the manufacturing processes of DMEU.	**07**
	(b)	Elaborately discuss about the chemistry, properties and textile applications of PEG.	**07**
		OR	
Q.5	**(a)**	Justify the position of polyacrylates as print table adhesives and soil releasing agents.	**08**
	(b)	Give the method for preparation of polyvinyl alcohol.	**06**

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