Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV • EXAMINATION – WINTER • 2014

Subject Code: 142801 **Date: 22-12-2014**

Subject Name: Manufacturing and Applications of Polymeric Material

Time: 02:30 pm - 05:00 pm **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)**	Describe the manufacturing and applications of DMDHEU.	**07**
	(b)	Elaborately discuss various techno-chemical aspects of silicone fluids.	**07**
Q.2	**(a)**	Explain in detail the manufacturing processes of DMEU.	**07**
	(b)	Describe various manufacturing processes of U.F. precondensate.	**07**
		OR	
	(b)	Justify the suitability of silicones as textile softeners and antifoaming agents.	**07**
Q.3	**(a)**	Describe in brief the chemistry, manufacturing and applications of melamine formaldehyde resins.	**09**
	(b)	Discuss applications of urea formaldehyde resins with its merits and demerits.	**05**
		OR	
Q.3	**(a)**	Give detailed review on silicone water repellents.	**07**
	(b)	Discuss the chemistry and properties of PVA and its commercial grades available.	**07**
Q.4	**(a)**	Describe the method for preparation of acrylate binders.	**07**
	(b)	Discuss the applications of Polyacrylates in textile sizing and finishing.	**07**
		OR	
Q.4	**(a)**	Give the method for synthesis of Polyvinyl acetate for textile finishing application.	**07**
	(b)	Explain the method for manufacturing of PVA and its use in textile finishing.	**07**
Q.5	**(a)**	Describe the method for Preparation of PVC and discuss its application in textile coating.	**07**
	(b)	Describe the process of bulk polymerization for the preparation of polyacrylics acid and its sodium salt.	**07**
		OR	
Q.5	**(a)**	Discuss in brief the chemistry, properties and applications of PEGs.	**07**
	(b)	Describe any one process for manufacturing of Polyethylene. Discuss	**07**

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