Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2013

Subject code: 1721607 **Date: 05-06-2013**

Subject Name: Polymer Materials and Testing

Time: 10.30 am – 01.00 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)**	What do you mean by Synthetic fibre? Discuss its properties.	**(07)**
	(b)	Why Spinning is important for fibre? List the different methods for spinning a fibre. Give the difference between all the methods.	**(07)**
Q.2	**(a)**	Discuss in detail about the chemistry, compounding, vulcanisate properties & applications of Poly Butadiene Rubber (PBR).	**(07)**
	(b)	Write about the chemistry and vulcanisate properties of Acrylonitrile Butadiene Rubber (NBR).	**(07)**
		OR	
	(b)	Explain the chemistry and compounding of EPM & EPDM Rubber.	**(07)**
Q.3	**(a)**	Discuss about the properties, characteristics and uses of Nylons.	**(07)**
	(b)	ñCellulose derivatives used as Plastics.ò Justify the statement.	**(07)**
		OR	
Q.3	**(a)**	What do you mean by Kevlar? Discuss its properties & uses.	**(07)**
	(b)	Write in detail about Polytetrafluoroethylene (Teflon).	**(07)**
Q.4	**(a)**	Justify the difference between Quality control & Quality assurance.	**(07)**
	(b)	Explain the theoretical relationship between Stress & Deformation.	**(07)**
		OR	
Q.4	**(a)**	ñVariability due to testing is reduced by improving the accuracy or precision of the apparatus & procedures usedò. Justify the statement.	**(07)**
	(b)	Write the importance of Standards & Test methods.	**(07)**
Q.5	**(a)**	Define the Term óHardnessô. Write in detail about its methods for measuring	**(07)**
	(b)	Write the importance of Tear Strength properties for vulcanized rubber. Discuss the procedure, calculations & principle of the method.	**(07)**
		OR	
Q.5	**(a)**	Write the importance of abrasion test for polymer products. Also discuss about the abrasive cloth & procedure & test methods for carried out the abrasion test.	**(07)**
	(b)	Explain the influence of storage, its period & condition on the properties of polymer product.	**(07)**

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