Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER – V (NEW) EXAMINATION – WINTER 2015

Subject Code: 2152603 **Date:05/12/2015**

Subject Name: Textile & Metal Reinforcement in Elastomer

Time:10:30am to 1:00pm **Total Marks: 70**

Instructions:

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

Q. 1		**Answer the following.**	**(14)**
	(i)	**What do you mean by Linear Density of Fiber? Write its unit.**	
	(ii)	**Write the basic difference between the chemistry of Nylon 6 and Nylon 66.**	
	(iii)	**List the principle ways to achieve the adhesion between textile and rubber.**	
	(iv)	**How the Heat-setting treatment is important for fabric?**	
	(v)	**Write the importance of Knitting. List the types of knitting.**	
	(vi)	**List the technical limitations of Kevlar Aramid fiber.**	
	(vii)	**Write the basic categories of Bond failure for rubber to metal bonding.**	
Q. 2	**(a)**	**Draw the schematic diagram showing Spreading technique for coating of fabric with rubber and explain about machine and process in detail.**	**(07)**
Q. 2	**(b)**	**Describe the production of Viscose Rayon with reaction mechanism.**	**(07)**
		OR	
Q. 2	**(b)**	**Write a detailed note on chemical and mechanical properties of Cotton fiber.**	**(07)**
Q. 3	**(a)**	**Name the basic types of machines used for Heat-setting of Fabric. Explain the principle of operation for any one with schematic diagram.**	**(07)**
	(b)	**Explain the procedure for Peel test of heavy duty fabrics and multi-ply constructions.**	**(07)**
		OR	
Q. 3	**(a)**	**Short note on Adhesive treatment for Polyester.**	**(07)**
	(b)	**Discuss about Direct tension testing for assessment of Rubber to Fabric adhesion.**	**(07)**
Q. 4	**(a)**	**Explain about the effect of different variables on Bond strength for rubber to metal bonding.**	**(07)**
	(b)	**Discuss in detail about importance of Industrial textile.**	**(07)**
		OR	
Q. 4		**List the subdivision of Bonding process and explain all in detail.**	**(14)**
Q. 5	**(a)**	**Write the importance of using Short fiber filled compounds for rubber product.**	**(07)**
	(b)	**What do you mean by Non- Woven fabric? List the processes for production of Non- Woven fabric and explain any one in detail.**	**(07)**

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OR

Q. 5	**(a)**	**Discuss in detail about Santoweb fiber.**	**(07)**
	(b)	**List the basic types of fabric Weave. Explain any two by giving the diagram of Weave design.**	**(07)**

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