

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E SEM-V Examination-Nov/Dec.-2011****Subject code: 152603****Date: 26/11/2011****Subject Name: Textile & Metal Reinforcement of Elastomers****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 Answer the following.**14**

1. Which properties should be contained by polymer to be used as a fibre intermediate?
2. List the first four finishing operations carried out after spinning of the fibre.
3. Define the term: (i) Denier (ii) Crimp
4. List the different types of Rayon used in rubber industry for reinforcement purpose.
5. "Excessive Softeners reduce the bond strength." Justify the statement.
6. List the different types of Post curing treatment used for Rubber to Metal bonding. Write in detail about any two.
7. Write about mechanical & chemical treatment given for Stainless steel metal for bonding purpose.

Q.2 (a) Discuss in detail about Melt bonding & Needle-punched Non-Woven fabrics. **07**

(b) Discuss the standard test procedures for Peel Strength. **07**

OR

(b) Describe in detail about Peel tests involving Light weight coatings of fabrics. **07**

Q.3 (a) Write in detail about Possible Causes & Remedies for failure at the rubber cement interface. **07**

(b) Discuss in detail about the selection of materials for good adhesion between Rubbers to Metal. **07**

OR

Q.3 (a) Short note on "Self- bonding compounds". **07**

(b) Write in detail about Ebonite bonding & Isocyanate Cement bonding. **07**

Q.4 (a) Discuss the industry related application of Teflon. **07**

(b) Define the term: "fibre" & List the important requirements of fibre. **07**

OR

Q.4 (a) Discuss in detail about problems related to Cotton Reinforcement. **07**

(b) Write in detail about the properties of Nylon & Polypropylene. **07**

Q.5 (a) Why Short fibre filled compounds should be used? Explain in detail. **07**

(b) Short note on "The in situ bonding system." **07**

OR

Q.5 (a) Discuss in detail about fibre orientation of short fibres & its effect on properties of rubber compound. **07**

(b) What are the Industrial Textiles? Write the applications & Key requirements for Industrial Textiles used in Transportation & Construction field. **07**
