

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – WINTER 2013****Subject Code: 152603****Date: 04-12-2013****Subject Name: Textile & Metal Reinforcement of Elastomers****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 Answer the following (14)

- (i) List the difference between yarn & thread?
- (ii) What do you mean by EPD, EPI & PPD?
- (iii) List the different methods used for coating a fabric.
- (iv) What are the industrial textiles?
- (v) List the standardized basic categories of rubber to metal bonding failure which covers approximately 80% of the total failure occurred.
- (vi) What are the chemical & mechanical treatment given to steel (low carbon) & aluminum used as a metal for bonding purpose?
- (vii) Define the term 'Short Fibres'. Which one is the main noticeable effect observed in product made by using short fibre?

Q.2 (a) List the methods used for products, which are classified as non-woven fabrics. Write about any two in detail. (07)**(b) Write the application & key requirements of industrial textile coatings in transport and construction field. (07)****OR****(b) Discuss in detail about fibre morphology. (07)****Q.3 (a) Discuss the effect of different variables on bond strength. (07)****(b) Explain in detail about the properties of fibre(short) filled compound. (07)****OR****Q.3 (a) Which are the main considerations for production of strong, environmental resistant bonds? Explain each in detail. (07)****(b) List the application of Santoweb fibre in commercial & development products. (07)****Q.4 (a) What do you mean by heat-setting process? Explain the importance of this process. (07)****(b) Short note on "Peel tests involving lightweight coatings on fabrics." (07)****OR****Q.4 (a) Write in detail about the direct tension testing of rubber to fabric adhesion. (07)****(b) Short note on "The in Situ Bonding system." (07)****Q.5 (a) Discuss the different methods of Spinning. (07)****(b) Write in detail about the properties & application of Teflon. (07)****OR****Q.5 (a) Discuss the manufacturing process of Viscous Rayon. (07)****(b) Explain in detail about identification of textile fibres. (07)**
