

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV (NEW) EXAMINATION – SUMMER 2022

Subject Code:3142608**Date:04-07-2022****Subject Name:Textile & Metal Reinforcement of Elastomers****Time:10:30 AM TO 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.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Mention the chemical properties of Polyester fiber. (03)
(b) Explain the term: (i) Crimp (ii) Tenacity (04)
(c) Write about term Fiber and write about detailed classification of fibers. (07)

- Q.2** (a) List the properties and applications of Aramid fiber. (03)
(b) Compare between Nylon 6 & Nylon 6, 6. (04)
(c) Give reaction mechanism for synthesis of Regenerated cellulose and explain its production. (07)

OR

- (c) Explain about cotton yarn production in detail with schematic diagram. (07)
Q.3 (a) What is Non-woven fabric? Write its advantages. (03)
(b) Write basic types of Weave. Explain about any one. (04)
(c) Mention various methods for Non-woven fabric production. Explain about any one. (07)

OR

- Q.3** (a) Write advantages of Woven fabric. (03)
(b) What is Knitting? How it is different than Weaving? (04)
(c) Write about principle of Weaving with schematic diagram. (07)

- Q.4** (a) Mention the subdivision of Bonding process. (03)
(b) Write about Santoweb short fibres. (04)
(c) Describe in detail about Rubber to Cement Failure with its causes and remedies. (07)

OR

- Q.4** (a) Write in brief about Ebonite Bonding. (03)
(b) Analyze the influence of Short fibers in composite properties. (04)
(c) Describe in detail about Cement to Metal Failure with its causes and remedies. (07)

- Q.5** (a) Decode the fabric designation: EbPb200/50. (03)
(b) Explain about T-Peel Test. (04)
(c) Draw schematic diagram for Heat setting treatment for cord and explain it in detail. (07)

OR

- Q.5** (a) List basic types of Twist direction and its significance. (03)
(b) Draw schematic diagram for standard test procedure for measurement of Peel strength of bonded fabric. (04)
(c) Write in detail about advantages and importance of Heat setting treatment for fabric. (07)