

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-V (NEW) - EXAMINATION – SUMMER 2017****Subject Code: 2152907****Date: 10/05/2017****Subject Name: Man Made Fibre Technology****Time: 02:30 PM to 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.

|            |   | <b>MARKS</b> |
|------------|---|--------------|
| <b>Q.1</b> | <b>Short Questions</b>  | <b>14</b>    |
|            | 1 What is polymer?  |              |
|            | 2 Give application areas of metallic fibers.  |              |
|            | 3 Define the term Glass transition temperature.   |              |
|            | 4 Give Yang's Classification of manufactured fibres.  |              |
|            | 5 Name three main components of spin finish.  |              |
|            | 6 State types of air textured yarns available.  |              |
|            | 7 What are the applications of knit de knit textured yarns?   |              |
|            | 8 Enlist the techniques used for application of spin finish.  |              |
|            | 9 Name the most widely used fiber in the world.   |              |
|            | 10 Mention types of draw texturing machines.  |              |
|            | 11 Name the high performance fibers.  |              |
|            | 12 Write density of Glass fiber.  |              |
|            | 13 State types of methods used for the production of Aramid fiber.                                    |              |
|            | 14 Write application areas of carbon fiber.   |              |
| <b>Q.2</b> | (a) Give the routes by which polyester and polyamide fibers can be made flame retardant.              | <b>03</b>    |
|            | (b) Enlist the desirable properties of Spin finish.   | <b>04</b>    |
|            | (c) Write short note on Aramid fiber.   | <b>07</b>    |
| <b>OR</b>  |   |              |
|            | (c) Explain Carbon fibre manufacturing process with neat sketch.                                      | <b>07</b>    |
| <b>Q.3</b> | (a) Explain mechanism of permanent set.   | <b>03</b>    |
|            | (b) The TPA process route presents greater difficulties compared with the DMT process – Give reasons. | <b>04</b>    |
|            | (c) Explain Glass fibre manufacturing process with neat sketch.                                       | <b>07</b>    |
| <b>OR</b>  |   |              |
| <b>Q.3</b> | (a) Write in brief about antistatic polyester yarns.  | <b>03</b>    |
|            | (b) Discuss in brief chemical modification of nylon6 by poly (acrylamide) during polymerization.      | <b>04</b>    |
|            | (c) Write short note on Textured yarn defects.  | <b>07</b>    |
| <b>Q.4</b> | (a) Discuss in brief about fibers with microvoids and microcrates.                                    | <b>03</b>    |
|            | (b) Give classification of textured yarn.   | <b>04</b>    |
|            | (c) Explain simultaneous draw texturing process in detail.  | <b>07</b>    |
| <b>OR</b>  |   |              |
| <b>Q.4</b> | (a) Write the advantages of sequential draw texturing.  | <b>03</b>    |
|            | (b) Give reasons why draw texturing is more economical.   | <b>04</b>    |
|            | (c) Discuss developments in Air Jet texturing.  | <b>07</b>    |
| <b>Q.5</b> | (a) Discuss effect of spin finish on textured yarn quality.   | <b>03</b>    |
|            | (b) Explain contactless heater box.   | <b>04</b>    |
|            | (c) Explain principle of False twist texturing.   | <b>07</b>    |

**OR**

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|------------|--|-----------|
| <b>Q.5</b> | <b>(a)</b> Discuss effect of twist on textured yarn quality. | <b>03</b> |
|            | <b>(b)</b> Explain contact type heater box.                  | <b>04</b> |
|            | <b>(c)</b> Explain edge crimping in detail.                  | <b>07</b> |
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