

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-III (NEW) EXAMINATION – WINTER 2023****Subject Code:3132906****Date:18-01-2024****Subject Name:Textile Materials****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.

|                                                                                                           | Marks     |
|-----------------------------------------------------------------------------------------------------------|-----------|
| <b>Q.1</b> (a) Draw the cross-section shape for polyester, acrylic and nylon.                             | <b>03</b> |
| (b) Classify natural fibres with suitable examples.                                                       | <b>04</b> |
| (c) Explain in detail about different steps involved in manufacturing of viscose rayon with neat diagram. | <b>07</b> |
| <b>Q.2</b> (a) Enlist the fibres produce by melt spinning.                                                | <b>03</b> |
| (b) Explain in detail about hemp fibre.                                                                   | <b>04</b> |
| (c) Explain cultivation of silk.                                                                          | <b>07</b> |
| <b>OR</b>                                                                                                 |           |
| (c) Explain with neat sketch manufacturing process of acrylic fibre.                                      | <b>07</b> |
| <b>Q.3</b> (a) Draw only morphological structure of cotton fibre.                                         | <b>03</b> |
| (b) Write short note on properties of polyester fibre.                                                    | <b>04</b> |
| (c) Discuss in detail about VK tube method for Nylon fibre.                                               | <b>07</b> |
| <b>OR</b>                                                                                                 |           |
| <b>Q.3</b> (a) Define: Mature, Immature and Dead cotton fiber.                                            | <b>03</b> |
| (b) Describe the any two essential properties of textile fibre in detail.                                 | <b>04</b> |
| (c) Explain in detail properties of Silk Fibre.                                                           | <b>07</b> |
| <b>Q.4</b> (a) State merits and demerits of man-made fibers.                                              | <b>03</b> |
| (b) Explain melt spinning process with neat sketch.                                                       | <b>04</b> |
| (c) Write a detailed note on Bamboo fibres.                                                               | <b>07</b> |
| <b>OR</b>                                                                                                 |           |
| <b>Q.4</b> (a) Write note on Tencel fibre.                                                                | <b>03</b> |
| (b) Explain physical properties of nylon 6,6.                                                             | <b>04</b> |
| (c) Explain the dry and wet spinning methods.                                                             | <b>07</b> |
| <b>Q.5</b> (a) Give chemical composition of cotton fiber.                                                 | <b>03</b> |
| (b) Write brief note on organic cotton.                                                                   | <b>04</b> |
| (c) Write in detail about cultivation of cotton fiber.                                                    | <b>07</b> |
| <b>OR</b>                                                                                                 |           |
| <b>Q.5</b> (a) How one can obtain jute fiber?                                                             | <b>03</b> |
| (b) How the degumming of silk is carried out?                                                             | <b>04</b> |
| (c) Discuss in detail with sketch about morphological structure of wool fiber.                            | <b>07</b> |

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