

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – WINTER 2018****Subject Code:2152907****Date:04/12/2018****Subject Name:Man Made Fibre Technology****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.

| | | MARKS |
|------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Q.1 | (a) State the unique properties of man made fibres. | 03 |
| | (b) Write briefly about the different tow to top conversion systems. | 04 |
| | (c) Define texturing and discuss in detail about the feed material characteristics that has profound effect on properties of textured yarn. | 07 |
| Q.2 | (a) Name the techniques available for producing textured yarn and state which is the most widely used technique. | 03 |
| | (b) Mention the three routes through which the polyester and polyamide fibres can be made flame retardant. | 04 |
| | (c) Discuss the properties of spin finish and explain any one spin finish application technique with a neat sketch. | 07 |
| | OR | |
| | (c) What is degree of setting? Explain the mechanism of permanent set. | 07 |
| Q.3 | (a) Draw the schematic diagram of false twist texturing process. | 03 |
| | (b) Explain the concept of molecular orientation and crystallinity in fibres. | 04 |
| | (c) Explain the two important thermal transitions in a semi-crystalline polymer. | 07 |
| | OR | |
| Q.3 | (a) Which are the process variables in false twist texturing? | 03 |
| | (b) Explain why the role of molecular size and interaction is of paramount importance. | 04 |
| | (c) Discuss in detail about the spin finishes for filament yarns. | 07 |
| Q.4 | (a) Write briefly about the spindles in the draw texturing machines. | 03 |
| | (b) Compare the sequential and simultaneous draw texturing process. | 04 |
| | (c) Write in detail about the fibres with non-circular cross-section and hollow fibres. | 07 |
| | OR | |
| Q.4 | (a) State the main quality problems in friction twisting. | 03 |
| | (b) Write briefly about the heaters in the draw texturing machines. | 04 |
| | (c) Discuss in detail about the glass fibre and also explain its manufacturing process. | 07 |
| Q.5 | (a) What is chemical texturing? | 03 |
| | (b) Write briefly about the gear crimping. | 04 |
| | (c) Explain the airjet texturing. | 07 |
| | OR | |
| Q.5 | (a) Write briefly about the quality of air textured yarns. | 03 |
| | (b) What is stuffer box texturing? | 04 |
| | (c) Discuss the recent developments in the field of man made fibres. | 07 |
