

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2023

Subject Code:3172913

Date:16-12-2023

Subject Name: Modern 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.
4. Simple and non-programmable scientific calculators are allowed.

| | | MARKS |
|------------|------------------------------------------------------------------------------------------------|-----------|
| Q.1 | (a) Which are the manufactured fibres based on natural polymers and wholly synthetic polymers? | 03 |
| | (b) State the non-conventional applications of manufactured fibres. | 04 |
| | (c) Compare dry spinning and wet spinning. | 07 |
| Q.2 | (a) Define texturing. | 03 |
| | (b) Write briefly about heat setting of thermoplastic fibres. | 04 |
| | (c) Explain the spin finish application techniques. | 07 |
| OR | | |
| Q.3 | (c) State the spin finish properties and discuss about the spin finish components. | 07 |
| | (a) How does the structure formation take place during solution spinning? | 03 |
| | (b) Write briefly about production of fibre forming polymers. | 04 |
| | (c) Discuss the process variables in melt spinning and solution spinning. | 07 |
| OR | | |
| Q.3 | (a) Write briefly about molecular orientation in fibres. | 03 |
| | (b) What is glass transition temperature? | 04 |
| | (c) Explain about the extruder in the melt spinning machine. | 07 |
| Q.4 | (a) Write briefly about the cooling system at melt spinning. | 03 |
| | (b) State the applications and advantages of texturing. | 04 |
| | (c) Discuss the factors influencing properties of textured yarns. | 07 |
| OR | | |
| Q.4 | (a) State the features of high speed spinning. | 03 |
| | (b) Write briefly about draw texturing. | 04 |
| | (c) Explain the false twist texturing process. | 07 |
| Q.5 | (a) What is stuffer box texturing? | 03 |
| | (b) Write briefly about knit-de-knit process. | 04 |
| | (c) Discuss the recent developments in the field of texturing. | 07 |
| OR | | |
| Q.5 | (a) What is gear crimping? | 03 |
| | (b) Write briefly about high performance fibres. | 04 |
| | (c) Explain the airjet texturing process. | 07 |
