

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VII EXAMINATION – SUMMER 2025**

**Subject Code:3172913**

**Date:23-05-2025**

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

		MARKS
Q.1	(a) State the properties of manmade fibres that give them advantage over natural fibres.	03
	(b) What is the importance of the property orientation?	04
	(c) Explain the critical parameters in melt spinning process.	07
Q.2	(a) Define texturing.	03
	(b) State the applications of solution spun fibres.	04
	(c) Explain the drawing process of the fibres.	07
<b>OR</b>		
Q.3	(c) Write a short note on high performance fibres.	07
	(a) State the special features of high speed spinning.	03
	(b) Write briefly about the property crystallinity.	04
	(c) Explain the melt spinning process with a neat sketch of passage of material.	07
<b>OR</b>		
Q.3	(a) Write briefly about the extruder in melt spinning.	03
	(b) How is heatsetting of thermoplastic fibres carried out?	04
	(c) Explain the two important thermal transitions in a semicrystalline polymer.	07
Q.4	(a) Give the applications of textured yarns.	03
	(b) Which are the factors influencing false twist texturing.	04
	(c) Discuss the process variables in solution spinning.	07
<b>OR</b>		
Q.4	(a) State the properties of false twist textured yarns.	03
	(b) Write briefly about the feed material characteristics in airjet texturing.	04
	(c) Compare dry spinning and wet spinning.	07
Q.5	(a) What is stuffer box texturing?	03
	(b) Write briefly about the knife edge crimping.	04
	(c) Discuss the recent developments in texturing.	07
<b>OR</b>		
Q.5	(a) Which are the important process variables in airjet texturing?	03
	(b) Write briefly about draw texturing.	04
	(c) Discuss the knit-de-knit and gear crimping texturing process.	07

\*\*\*\*\*