

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2024

Subject Code:3172913

Date:11-12-2024

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) State the applications of manmade fibres.	03
	(b) Write briefly about molecular size and interactions.	04
	(c) Explain the melt spinning process with a neat sketch.	07
Q.2	(a) What are the functions of spin finish?	03
	(b) Write briefly about the significance of heat setting of thermoplastic fibres.	04
	(c) Discuss the factors influencing the properties of false twist textured yarn.	07
OR		
	(c) Explain the airjet texturing process.	07
Q.3	(a) How is melt spinning different from solution spinning?	03
	(b) Write briefly about the drawing of fibres.	04
	(c) Explain about crystallinity, orientation and fibre morphology.	07
OR		
Q.3	(a) State the special features of high speed spinning.	03
	(b) Draw the passage of material in any one solution spinning machine.	04
	(c) Explain the thermal transitions T_g and T_m .	07
Q.4	(a) What are the advantages of texturing?	03
	(b) State the parameters critical for melt spinning process.	04
	(c) Write in detail about the various developments in the field of fibres.	07
OR		
Q.4	(a) What are the feed material characteristics in false twist process?	03
	(b) Write briefly about the process variables in solution spinning.	04
	(c) Discuss the latest developments in texturing process.	07
Q.5	(a) State the quality aspects considered in regard to draw texturing.	03
	(b) What is stuffer box texturing?	04
	(c) How is gear crimping and knife edge crimping carried out? Explain.	07
OR		
Q.5	(a) State the non-conventional applications of manufactured fibres.	03
	(b) Write briefly about knit de knit process.	04
	(c) Explain the draw texturing process.	07
