Seat No.: _____ *Enrolment No._____*

GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-VIII Examination May 2012

Subject code: 182906

Subject Name: Modern Fibre Technology

Date: 08/05/2012 **Time: 10.30 am – 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.**

Q.1	**(a)**	Explain Molecular orientation and Crystallinity in fibres.	**07**
	(b)	Explain changes in crystal size and dispersion with heat setting.	**07**
Q.2	**(a)**	Explain the two important thermal transitions in a Semicrystalline polymer.	**07**
	(b)	Write in short on characterization of polymers at the molecular level.	**07**
		OR	
	(b)	Write a short note on GPC.	**07**
Q.3	**(a)**	Explain the structure development at high speeds in case of PET filaments and Nylon 6 yarns.	**07**
	(b)	Discuss the Melt spinning variables which determine the course of fibre formation and resulting fibre property and give the general conditions for spinning without a break. Also discuss the effect of Variable Throughput Rate and Consequences of Crystallization on the various property of fibre spun.	**07**
		OR	
Q.3	**(a)**	Write in short on DSC or DTG.	**07**
	(b)	What is birefringence? How it is used to identify polymer properties?	**07**
Q.4	**(a)**	What are different ways of producing super microfilament yarns by conjugated bicomponent spinning?	**07**
	(b)	How microgrooves, microvoids and microcraters are created in the polyester filament?	**07**
		OR	
Q.4	**(a)**	With a neat sketch explain a typical Dry-spinning cell and write on Spin stretch during Dry spinning.	**07**
	(b)	Compare Dry spinning and Wet spinning.	**07**
Q.5	**(a)**	Explain the Spin finish application techniques.	**07**
	(b)	State the functions of Spin finish and write on the Spin finish requirements for staple fibre production.	**07**
		OR	
Q.5	**(a)**	Compare properties of Tencel with other fibres. Write briefly on the production process.	**07**
	(b)	Write on manufacture of PPTA (Kevlar) fiber through dry-jet-wet spinning process.	**07**

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