Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

Sul Tir	bject	M. E SEMESTER – II • EXAMINATION – WINTER • 2014 code: 1722504 Date: 04-12-2014 Name: Modern Fiber Technology 2:30 pm - 05:00 pm Total Marks: 70	
1115	1. 2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	
Q.1	(a)	Which are the steps involved in the production of electro-conductive	07
	(b)	filaments? How molecular weight and inter molecular forces affect the melting point of the fibre?	07
Q.2	(a)	Draw flow diagrams for the manufacture of polyester fiber by DMT and PTA route.	07
	(b)	Which are the functional parts of the extruder? Explain each in detail. OR	07
	(b)	Explain different fibre morphology based on their orientation.	07
Q.3	(a) (b)	Which are the principal operations involved in fibre manufacturing process? How caprolactam polymerization can be conducted through different processing routes?	07 07
Q.3	(a)	OR Describe the load extension behavior of an undrawn fibre at room temperature.	07
Ų.S	(b)	With neat sketch explain a dry-jet-wet spinning process for PPTA fibre.	07
Q.4	(a) (b)	Define T_g and T_m . Explain free volume theory for T_g . Explain the coagulation variables affecting protofibre structure. OR	07 07
Q.4	(a)	Which are the variables affecting fibre formation and dimensions of the melt spinning process?	07
	(b)	Define õNature of settingö. Describe the mechanism of temporary and permanent set of fibre.	07
Q.5	(a)	What is the effect of evaporation to diffusion rate on filament cross section in dry and wet spinning?	07
	(b)	Define BCF? Give the production sequence for producing BCF yarn. OR	07
Q.5	(a)	Which type of glass fibre is used for textile applications? Give a chemical composition, manufacturing process and structure of glass fibre.	07
	(b)	Explain spin stretch process during dry spinning.	07
