

**THE TEXTILE ASSOCIATION (INDIA)**  
**GMTA EXAMINATION – 2020**  
**SECTION – CPAPER – C.1**  
**TEXTILE FIBRE SCIENCE**

**Date: 24.12.2020**

**MARKS: 100**

**Time: 10.00 am to 1.00 pm**

**Instructions:**

- 1. Attempt any Six questions out of which Q.1 is Compulsory**
  - 2. Answer each next question on new page**
  - 3. Figures to the right indicate full marks**
  - 4. Illustrate your answers with neat sketches & flow charts wherever necessary**
  - 5. Use of non-programmable electronic pocket calculator is permissible**
  - 6. Mobile and any other communication devices are not allowed in the Examination hall.**
  - 7. Assume suitable, data wherever necessary**
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Q1	a	Write a note on 'physical and chemical properties of silk.	10
	b	Discuss the two- phase model of semi-crystalline structure of Nylon fibre.	10
Q2	a	Describe the grading of raw silk.	08
	b	Discuss the melt spinning process of production of Nylon 66 fibres with a neat diagram.	08
Q3	a	Discuss the hydrophilicity of polyamide fibre in relation to the fine structure.	08
	b	Discuss the primary structure of silk fibroin.	08
Q4	a	Discuss static electric properties of wool fibre and its relationship with fibre structure.	08
	b	Describe the measurement of thermal characteristics of polyester fibres using Differential Scanning Calorimetry (DSC).	08
Q5	a	What is isoelectric point? Discuss the zwitterion structure of silk fibre.	08
	B	Write a note on 'degree of crystallinity and orientation of molecules in fibres.	08
Q6	a	Write a note on 'Thermal properties of Nylon 6 fibres. Comment on glass transition temperature.	08
	B	Discuss X Ray diffraction technique for elucidating the crystalline structure of wool. Comment on degree of crystallinity.	08
Q7	a	Define moisture content and moisture regain. Comment on moisture properties of natural fibres	08
	b	Discuss the tensile properties of viscose fibres under dry and wet conditions.	08
Q8	a	Write a note on the frictional characteristics of silk and wool fibres.	08
	b	Write a note on Use of SEM technique in describing the morphological properties of textile fibres.	08

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