THE TEXTILE ASSOCIATION (INDIA)
GMTA EXAMINATION – 2019
SECTION – CPAPER – C.1
TEXTILE FIBRE SCIENCE

Date: 21.12.2019       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

Q1 a  Write a note on ‘physical and chemical properties of cotton and linen. 10
b  Discuss the two phase model of semi-crystalline structure of Nylon fiber. 10
Q2 a  Describe the fine structure of silk. 08
b  Discuss the melt spinning process of production of polyester fibers with a diagram. 08
Q3 a  Discuss the hydrophobicity of polyester fiber in relation to the fine structure. 08
b  Discuss the secondary structure of silk fibroin. 08
Q4 a  Discuss static electric properties of wool fiber and its relationship with fiber structure. 08
b  Describe the measurement of thermal characteristics of acrylic fibers using Differential Scanning Calorimetry. 08
Q5 a  What is isoelectric point? Discuss the zwitterion structure of wool fiber. 08
B  Write a note on birefringence of fibers. 08
Q6 a  Write a note on ‘Thermal properties of polyester fiber’ Comment on glass transition temperature. 08
B  Discuss X Ray diffraction technique for elucidating the crystalline structure of viscose. Comment on degree of crystallinity. 08
Q7 a  What is conductivity of fiber? Discuss the use of conducting fiber. 08
b  Discuss the tensile properties of silk under dry and wet conditions. 08
Q8 a  Discuss the frictional characteristics of wool fibers. 08
b  Write a note on ‘Use of FTIR spectroscopic technique in describing the molecular structure of Silk’. 08

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