THE TEXTILE ASSOCIATION (INDIA)
G.M.T.A. EXAMINATION-2016
SECTION: C PAPER — C-1

TEXTILE FIBRE SCIENCE

Date: 23.12.2016
Marks: 100
Time: 10.00 am to 1.00 pm

Instructions:
1. Attempt SIX questions out of which Q1 is Compulsory
2. Answer each next question on new page
3. Figures to the right indicate full marks
4. Illustrate your answers with sketches and flow chart wherever necessary
5. Use of nonprogrammable electronic pocket calculator permissible
6. Mobile and any other communication devices are not allowed in the exam hall
7. Assume suitable data wherever necessary

Q1
a Discuss the physical and chemical properties of wool and jute. 10
b Discuss moisture regain characteristics of different natural and manmade fibres. 10

Q2
a Discuss the manufacture of viscose fibres with a neat diagram. 08
b Discuss the manufacture of polyester chips 08

Q3
a Describe the terms crystalline and amorphous phases in polymeric fibres with a schematic diagram. 08
b Discuss the two phase model for semi-crystalline fibre forming polymers. 08

Q4
a What is birefringence? Discuss the birefringence of different textile fibres. 08
b Write note on electrostatic charge generation and decay in textile fibres 08

Q5
a Differentiate the characteristics of polyester fibres made from PTA and Lactic acid 08
b Discuss the stress strain behavior of nylon 6 and cotton fibres. 08

Q6
Describe the thermal properties of manmade and natural fibres with reference to glass transition temperature and degradation. 16

Q7
Discuss characterization of polyester using X ray and FTIR techniques 16

Q8
Discuss with neat diagram the manufacture of polyamide 6 and polyamide 66 fibres. 16