THE TEXTILE ASSOCIATION (INDIA)
G.M.T.A. (REVISED) EXAMINATION – 2015
SECTION – C PAPER C1

TEXTILE FIBRE SCIENCE

Date: 24.12.2015 Marks: 100 Time: 10 pm to 1 pm

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

Q1 Compulsory Question

a. Discuss the classification of textile fibres. 10
b. Describe polyester fibre with reference to its aesthetic and comfort properties. 10

Q2

a. Explain with flow chart manufacture of Nylon Filament. 08
b. Discuss the problems related to oligomers in polyester fibre manufacture. 08

Q3

a. What is wet spinning? Give an account of difference between wet spinning and dry spinning and regenerated cellulose. 08
b. List different types of regenerated cellulosic fibres commercially available. Narrate their end use. 08

Q4

a. Discuss the manufacture of polyester fibre using DMT and TPA route. 08
b. Give an account of manufacture of polyester fibres using lactic acid. 08

Q5

a. Describe two phase model of illustrating the microstructure of a textile fibre. 08
b. List different methods of determination of degree of crystallinity of textile fibres. 08

Q6

a. Describe the physical structure of wool and silk. 08
b. Give an account of hysteresis of moisture in textiles. How is it correlated to the hydrophilicity. 08

Q7

a. What is birefringence? Discuss the birefringence of different textile fibres. 08
b. Discuss the static charge in textiles in relation to the problems in mechanical processing. 08
Q8  

a. Give an account of structure-property correlation with reference to mechanical properties.  
b. Define Young’s Modulus and give its significance to access the low stress mechanical properties.