THE TEXTILE ASSOCIATION (INDIA)
GMTA EXAMINATION – 2020
SECTION – C PAPER – C.2
POLYMER TECHNOLOGY

Date: 25.12.20
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

Q 1 Attempt any five 20
a What is fibre? Explain properties of polymer required to be a textile fibre
b What is polymerization reaction? Classify the polymerization reactions.
c Explain rheology of polymers.
d What are poly-functional polymers?
e Explain glass transition temperature of a polymer and explain its importance in Textiles.
f What is effect of time and temperature on mechanical behavior of Polymer

Q 2 Discuss rheology of polymers. Explain significance of different flow with reference to stress and strain properties. 16

Q 3 Write short notes on the following: 16
a. Initiators in Polymerization reaction.
b. Aging of polymers.
c. Classification of polymers.
d. Recycling of polymers.

Q 4 a Explain graft and block copolymerization 08
b Describe thermal characterization of polymers. 08

Q 5 a Define weight average and number average molecular weight distribution of polymers. Discuss the significance of them. 08
b Discuss polymerization reaction with a suitable example. 08

Q 6 What is polymer degradation? Explain various types of polymer degradation. 16

Q 7 a Explain tacticity of polymer. 08
b Discuss conducting polymers and their application. 08

Q 8 a Explain manufacturing process of Nylon 6. 08
b What is polymer degradation? Explain various types of polymer degradation. 08