THE TEXTILE ASSOCIATION (INDIA)
G.M.T.A. (REVISED) EXAMINATION – 2013
SECTION-C PAPER-II (C-2)
POLYMER TECHNOLOGY

Date: 24.12.2013
Marks : 100
Time: 10 am to 1 pm

Instructions:
1. Attempt six questions out of which Q.1 is compulsory
2. Answer each next main question on new page
3. Figure to the right indicate full marks
4. Illustrate your answer 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.

Q.1 Attempt any five of the following:
   i. What is monomer? How polymer is formed.
   ii. Enlist properties of polymer which is textile fibre.
   iii. What is initiator? Explain its role in Polymerization.
   iv. Classify polymer?
   v. What is viscosity?
   vi. Define molecular weight? What are methods to determine molecular weight of polymer?

Q.2. a. Explain rheology of polymers. What are different types of rheological behavior of polymers?
     b. What is polymerization reaction? Explain types of polymerization reaction.

Q.3. a. What is glass transition temperature of polymers? Explain working and importance of TGA in polymer industry.

Q.4 a. What is graft polymerization? Explain how normal polyester fibre is converted in cationic dyeable polyester.
     b. Explain, How polyester is prepared?

Q.5. Write short note on the following:
   i. Degree of polymerization
   ii. Conducting Polymers
   iii. Polymers in Textile
   iv. Radical polymerization

Q.6. a. What do you mean by degradation? How polymer degradation will be controlled.
     b. Explain ring opening polymerization. In which textile fibre manufacturing this technique used and how?

Q.7. a. How polymers are differentiate with their structure?
     b. Explain weight average method to determine molecular weight of polymers.

Q.8 Explain role of polymerization reaction in textile industry, Explain impact of polymer industry on environment and suggest solution for it.

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