THE TEXTILE ASSOCIATION (INDIA)
G.M.T.A. (REVISED) EXAMINATION – 2015
SECTION – D PAPER D-4

ANALYTICAL CHEMISTRY IN TEXTILE

Date: 27.12.2015
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

Marks: 100
Time: 2 pm to 5 pm

Q1 a. Give an account of difference between Raman spectra and IR spectra 10
b. State Beer's Law for absorption of electromagnetic radiation. 10

Q2 a. Explain with line diagram a colorimeter for measuring the strength of colour. 08
b. What is the difference between visible and ultraviolet spectra? Explain the salient features of their application in textiles. 08

Q3 a. What is Hook's law? Discuss its relevance to molecular vibrations. 08
b. Describe single and double beam IR spectrophotometer. 08

Q4 a. Define conductivity. Explain the measurement of pH of textile. 08
b. Discuss the use of differential thermal analysis in textiles. 08

Q5 a. What is thermal gravimetry? Describe the method of estimation of ash content by thermogravimetry. 08
b. Write a note on "Use of Mass spectroscopy in textiles". 08

Q6 a. Describe the application of paper chromatography in the analysis of dyes. 08
b. Discuss "Gel permeation chromatography" for determination of molecular weight of a textile polymer. 08

Q7 a. Give an account of "High performance of Liquid chromatography (HPLC). 08
b. Discuss estimation of Pentachlorophenol by HPLC 08

Q8 a. Explain different types of errors involved in the measurement. 08
b. Differentiate accuracy and precision with reference to confidence limits