THE TEXTILE ASSOCIATION (INDIA)
G.M.T.A. EXAMINATION-2016
SECTION: D PAPER – WOD.2

ANALYTICAL CHEMISTRY IN TEXTILES

Date: 26.12.2016  Marks: 100  Time: 2.00 Pm to 5.00 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  State Beer’s law and discuss its application in analysis of textiles.  10
    b  What is the difference between Visible and Ultra-violet radiation
        in relation to analysis of dyes?  10

Q2  a  What are molecular vibrations? Discuss the Infrared radiation
        spectroscopy with respect to analysis of silk.  08
    b  Describe with a schematic diagram a Double beam IR
        Spectrophotometer.  08

Q3  a  Explain NMR spectroscopy and its application to textile.  08
    b  State difference between Raman spectra and IR spectra.  08

Q4  a  Discuss mass spectroscopy and its uses in amine analysis.  08
    b  Write a note on pH meter.  08

Q5  a  Discuss conductometric analysis of water.  08
    b  What are the advantages of potentiometric titrations?  08

Q6  a  Explain Differential Thermal Analysis of polyester fibres.  08
    b  Explain Chromatography and illustrate the principle with paper
        chromatography.  08

Q7  a  Discuss thin layer chromatography.  08
    b  Compare gas chromatography and column chromatography.  08

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Q8

a. Discuss high performance liquid chromatography and state its uses in textile wet processing.

b. Explain precision, accuracy, significant figures and confidence limit in textile analytical chemistry.