THE TEXTILE ASSOCIATION (INDIA)  
G.M.T.A. (REVISED) EXAMINATION – 2014  
SECTION-A PAPER-A.2  
ENGINEERING CHEMISTRY

Date: 25.12.2014 MARKS: 100 Time: 10.00 a.m. to 01.00 p.m.

Instructions:  
1. Attempt any six questions out of which Q.1 is compulsory.  
2. Figures to the right hand side indicates full marks  
3. Illustrate your answer with suitable sketches and flow charts wherever necessary.  
4. Assume suitable data wherever necessary.

Q. 1 Attempt any five  
   a. What is hardness? Differentiate hard water and soft water.  
   b. Differentiate between homopolymer and copolymer  
   c. Discuss types of detergents  
   d. What are properties of lubricants?  
   e. What is chemical composition of cement? Explain types of cements.  
   f. Explain the aim, principle, procedure, calculation involved in EDTA method?  
   g. Write a short note on fuels.

Q. 2 What is corrosion? Explain causes and types of corrosion. How will you control corrosion?  

Q. 3 Write a short note  
   a) Applications of thermal insulators.  
   b) Use of synthetic fibre in textile  
   c) Lime soda process for water treatment  
   d) Addition and Condensation polymerization

Q. 4 What are surfactants? Explain anionic, cationic and nonionic surfactants? How will you test ionic nature of surfactants?  

Q. 5 a) Calculate the total hardness of a sample of water in 0Fr and 0Cl having the following:  
   salts CaCl2 = 11.1mg/l, Mg(HCO3)2 = 7.3mg/l, Ca(HCO3)2 = 5.1mg/l, Mg(NO3)2 = 14.8mg/l.  
   b) What are insulators? Enlist application of electrical insulators.  
   c) What is polymer? Explain use of different polymeric material in textile industry.

Q. 6 a) Write a note on i) Proteins  
   b) Define alloy. Classify alloy and mention the properties of alloys  
   ii) Fibres  
   b) Define alloy. Classify alloy and mention the properties of alloys  

Q. 7 a) What are renewable energy sources? Explain its necessity in textile.
b) What is mechanism of wet corrosion? (08)

Q.8 a) What are lubricants. Explain its principle and its properties. Why is flash and fire point is important for lubricants? (08)

b) What is chemical composition of starch? Explain reaction enzymes on starch and used of enzyme in textile industry. (08)