THE TEXTILE ASSOCIATION (INDIA)  
GMTA (REVISED) EXAMINATION – 2016  
SECTION – D PAPER – D.2  
WET PROCESSING II - DYEING  

Date: 24.12.2016  
Marks: 100  
Time: 02.00 pm to 05.00 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  
   Mobile and any other communication devices are not allowed in the Examination hall  

I. Answer the following Questions by choosing Correct option (compulsory)  

1. Temporary hardness is due to the presence of  
   a) Carbonates  b) Bi-carbonates of Ca and Mg  c) Silicates  d) Nitrates  

2. Cotton and Art silk are usually dyed with  
   a) Acid dyes  b) Basic dyes  c) Direct dyes  d) Metal Complex dyes  

3. Best pH for degumming of raw silk is  
   a) 7  b) 9.5-10.5  c) 2-4  d) None of these  

4. Spray dyeing machine is popular for  
   a) Low liquor ratio  
   b) Low temperature dyeing machine  
   c) Low salt dyeing  
   d) Low chemical usage  

5. Usually vat dyeing takes place at  
   a) Low temperature and high alkaline content  
   b) Low temperature and low alkaline content  
   c) High temperature and low alkaline content  
   d) High temperature and high alkaline content  

6. Acid dyes are  
   a) Non-ionic  b) Cationic  c) Ionic  d) None of these  

7. H₂O₂ bleaching is also called as  
   a) Reduction Bleaching  b) Temporary Bleaching  
   c) Oxidizing bleaching  d) Acidic bleaching  

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8. Mercerization process improves the
   a) Strength  b) Colour  c) Cross-section shape  d) none of these

9. For darker shade dyeing
   a) higher liquor is preferred
   b) low liquor is preferred
   c) high salt percentage
   d) big containers are preferred.

10. Wash fastness test for dyed elements are conducted
    a) To know the resistance to sunlight exposure
    b) To know the resistance for washing conditions
    c) To know the resistance to rubbing condition
    d) To know the resistance to sweating condition

Answer ANY FIVE of the following

II. What is the role of water in processing? Explain how the hardness of water is minimized
    (Temporary and Permanent hardness) 16

III. Explain with a neat diagram scouring of cotton fiber. Also give the list of chemicals and parameters
     like temperature, time and pH of scouring process. 16

IV. Explain oxidative and reductive bleaching and also explain how the bleaching of silk is done with
     procedure and recipe. 16

V. Why direct dyes are popular for dyeing cotton and viscose fibers? Give the recipe for dyeing cotton
    with direct dyes also mention the temperature and time parameters. 16

VI. Name the different additives used during dyeing and their role, also explain the auxiliaries used in
     dyeing process. 16

VII. Give the list of machineries used for dyeing of yarn and fabric, with a neat diagram explain fiber
     dyeing or yarn dyeing in hank form. 16

VIII. Why polyester dyeing is different from cotton and silk dyeing? Write the procedure for dyeing of
     polyester using suitable carrier. 16