**THE TEXTILE ASSOCIATION (INDIA)**  
**G.M.T.A. EXAMINATION-2016**  
**SECTION: D PAPER - WOD.5**

**PROCESS & QUALITY MANAGEMENT IN WET PROCESSING**

**Date:** 27.12.2016  
**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 non-programmable electronic pocket calculator permissible  
6. Mobile and any other communication devices are not allowed in the exam hall  
7. Assume suitable data wherever necessary

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<tr>
<th>Question (Q)</th>
<th>Part (a)</th>
<th>Part (b)</th>
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| Q1           | a. Compare Quality control and Process control techniques in textile wet processing.  
              | b. Describe the process and quality control steps involved in dyeing of cotton yarn using cabinet dyeing machine. |
| Q2           | a. Discuss the estimation of residual wax and total wax in wool by Soxhlet extraction method.  
              | b. What is barium activity? Describe the method of estimating the barium activity. |
| Q3           | a. Describe the determination of acid groups by methylene blue absorption method.  
              | b. Discuss the estimation of ash content in silk. |
| Q4           | a. What is colour fastness to perspiration and explain the method of determining perspiration fastness of dyed cotton fabric.  
              | b. What is shrinkage? Discuss relaxation and molecular shrinkage in knitted polyester fabric. |
| Q5           | a. Compare water repellency and water proofing with suitable illustrations.  
              | b. What are fire proof and flame retardant properties? Describe determination of flammability of cotton fabric. |
              | b. Discuss evaluation of efficiency of wetting agent by sinking time method. |
| Q7           | a. Discuss the method of estimating the strength of hydrogen peroxide. |
b  What is eco-friendly processing? List the banned amines employed in the azo dyes meant for textile coloration.

Q8  

a  Discuss briefly the quality management system ISO 9000 and ISO Environment management system ISO 14000 certification.

b  List the instruments used for determining various eco-parameters pertaining to textiles.