THE TEXTILE ASSOCIATION (INDIA)
A.T.A PART-I EXAMINATION-2016
PAPER-A 1.3
TEXTILE FIBRES

Date: 25.12.2016
Marks: 100
Time: 10.00 am to 1.00 pm

Instructions: 1. Attempt six questions out of which Q.1a is compulsory
2. Answer each main question on new page
3. Figures to the right indicate full marks
4. Illustrate your answers with sketches and flow-charts wherever necessary
5. Use of non programmable electronic calculator permissible
6. Mobile and any other communication devices are not allowed in exam hall
7. Assume suitable data wherever necessary.

Q. 1a. State True or False, if the statement is false, rewrite the correct statement: (16)
   a) Cotton is having lower moisture content than wool.
   b) Polyester is soluble in formic acid.
   c) Silk and cotton both are protein fibres.
   d) Polypropylene is heavier than polyester.
   e) Viscose is having higher alkali resistance.
   f) Manufacturing of polyester is carried out by wet spinning method.
   g) Tensile strength of viscose in wet condition is lower than dry strength.
   h) Burning of wool gives smell of burning paper.

Q. 1d. Match the following: (04)

<table>
<thead>
<tr>
<th>S No</th>
<th>Fibres</th>
<th>S No</th>
<th>Constituent chemical material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cotton</td>
<td>a</td>
<td>Keratin</td>
</tr>
<tr>
<td>2</td>
<td>Silk</td>
<td>b</td>
<td>Polyacrylonitrile</td>
</tr>
<tr>
<td>3</td>
<td>Wool</td>
<td>c</td>
<td>Cellulose</td>
</tr>
<tr>
<td>4</td>
<td>Acrylic</td>
<td>d</td>
<td>Fibroin</td>
</tr>
</tbody>
</table>

Q. 2

a) What are the developments in synthetic fibres? (08)

b) Write a short note on Classification of Textile Fibres (08)

Q. 3

a) Explain in detail the identification of wool and silk by microscopic, chemical and burning methods (08)

b) Describe in detail the manufacturing of polyester (08)
Q.4
a) Describe the importance of production of polyester/cotton blended fabrics.
   What are the physical properties of textile fibres? Give physical properties of cotton.
   (08)

Q.5
a) Describe the manufacturing of Viscose rayon in detail.
   (08)

b) Describe melt spinning of manufacturing of manmade fibres with a neat diagram.
   (08)

Q.6
a) Explain the solubility and burning test for Nylon, polyester and acrylic.
   (08)

b) Write a note on ‘Chemical properties of cotton fibres’
   (08)

Q.7 Write a short note on the following:
   a) Application of jute and flax fibres
   b) Physical properties of silk and wool
   c) Production of raw silk
   d) Regenerated fibres

Q.8 Answer the following:
   a) Give the application of polypropylene fibres
   b) What are commercial fibres?
   c) Mention any four desirable properties of fibres for use in textiles.
   d) What are different types of Nyions?
   e) Give the advantages of polyester over cotton for apparel use.
   f) What is Lycra? Give its applications.
   g) Write a short note on the effect of acids on cotton.
   h) What are the applications of acrylic fibres?