THE TEXTILE ASSOCIATION (INDIA)
G.M.T.A. (REVISED) EXAMINATION – 2012
SECTION-B PAPER-I (B-1)
YARN MANUFACTURE

Date: 22.12.2012
Marks: 100
Time: 2 to 5 pm

Instructions:
1. Attempt six questions out of which Q.1 is compulsory
2. Answer each next main question on new page
3. Figure to the right indicate full marks
4. Illustrate your answer 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 exam hall.
7. Assume suitable data wherever necessary.

Q.1. a. State whether the following statements are true or false, giving reasons.
   1. Ginning is the process of cleaning the Trash from the cotton. (08)
   2. The object of combing is to draft the material.
   3. The object of carding is to remove short fibres.
   4. Break draft in a 3 over 3 drafting system is the draft between 2nd roller and front roller.

b. Explain any Three of the following statements, giving reasons: (12)
   1. In cotton spinning finer counts require longer fibres.
   2. Combing improves yarn strength and uniformity.
   3. Roving bobbins have tapered ends and bobbin speed decreases with increase in bobbin diameter.
   4. OE spinning gives higher production rates as compared to ring spinning.

Q.2. a. State the objects of the Blow Room and briefly explain how they are achieved. (08)
   b. Describe the different types of beaters used in the Blow Room.
   c. The trash content in the lap at the Blow Room is 2.8%. If the trash content in the feed material is 3.8%, find the cleaning Efficiency of the Blow Room. (03)

Q.3. a. Explain the carding and stripping actions on the card. (05)
   b. Describe the details of the wires used on the licker-in, cylinder and flats on the card. (07)
   c. Briefly explain the process of grinding on the card. (04)

Q.4. Write notes on any Two of the following: (16)
   (i) Ginning – Objects and process. (ii) Principle of twisting and winding on Speed Frames.
   (iii) Doubling – Objects and methods.

Q.5. a. State the objects of combing and describe with neat sketches the combing cycle. (08)
   b. Describe the construction and working of the drafting system on the Speed Frame. (08)

Q.6. a. Briefly describe the construction and working of the Ring Frame. (11)
   b. The particulars of a Ring Frame are given below. (05)

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<table>
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<tbody>
<tr>
<td>yarn count (Nₐ)</td>
<td>36's</td>
<td>spindle speed (rpm)</td>
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<tr>
<td>Roving Hank (Nₐ)</td>
<td>1.5's</td>
<td>Efficiency (%)</td>
</tr>
<tr>
<td>T.M</td>
<td>4</td>
<td>Twist contraction (%)</td>
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Find the draft, twist and production/spindle/shift.
Q.7. a. Describe the basic principle of Open End spinning, giving its advantages over ring spinning. Give the classification of the OE spinning systems.

b. Describe with a neat sketch the differential on the Speed Frame and explain its function.

Q.8. Write notes on any Two of the following:

(i) Modern cards.
(ii) Rotor Spinning.
(iii) Autolevellers.

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