THE TEXTILE ASSOCIATION (INDIA)
A.T.A (REVISED) EXAMINATION-2016
PART II –PAPER –A 2.1

PRINCIPLES OF YARN MANUFACTURE

Date: 22.12.2018
Marks: 100
Time: 2 pm to 5 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 nonprogrammable electronic pocket calculator permissible.
6. Mobile and any other communication devices are not allowed in the exam hall.
7. Assume suitable data wherever necessary.

Q1

a. Fill in the blanks.
   i. Tex is ----------- yarn numbering system.
   ii. Unit of tenacity in metric system is -----------.
   iii. Carding process facilitates --------------.
   iv. Smaller the flocks,............. is the efficiency in blowroom.
   v. In step cleaners, beaters are arranged on a line ........ upwards at ......

b. Define or explain the following terms
   i. Noll
   ii. Count
   iii. Indirect system
   iv. Direct system
   v. Denier

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c. State true or false
   i. Staple fibres must be compressed into bales to assist in
      transportation and storage.
   ii. Fibre to fibre cohesion is the highest in carded sliver.
   iii. The grids do not have any influence on the cleaning effect.
   iv. Spinning characteristics are related to fibre length and ---------
   v. Hydrophilicity is important for spinnability.

d. Match the following:
   i. Ring frame
   ii. Speed frame
   iii. Combing
   iv. Drawframe
   v. Blow room
   a. Auto leveller
   b. Lap formation
   c. Roving
   d. Hopper feeder
   e. Dofer, Licker-in and Flats

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<th>Q2</th>
<th>What are the objectives of blowroom? Explain the working principle of bale openers and cleaning and condenser with neat labelled sketch.</th>
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| Q3.      | Write short note on the following:  
  i. Lickerin and flats  
  ii. Ring and traveler  
  iii. Yarn Numbering system  
  iv. Lappets and condensers. | 16 |
| Q4.      | a. Discuss the effect of cylinder speed on the productivity and quality in carding  
  b. Explain the working principle of 4/4 drawframe with neat labeled sketch. | 08 |
| Q5.      | a. Explain the working principle of comber with neat labelled sketch.  
  b. What are the objectives of combing? What are the methods of improving the noil percentage? | 08 |
| Q6.      | a. Describe the working procedure of 3/3 drafting mechanism of speed frame with neat labelled diagram.  
  b. Discuss the working procedure of cone winding machine with neat labelled diagram. | 08 |
| Q7.      | a. Discuss with working principle of TFO (two or one) twisting machine with neat labelled sketch.  
  b. Describe the working procedure of Pneumatic splicing technique. | 08 |
| Q8.      | Write short note of the following  
  a. i. Fancy yarns ii. Pneumafil suction device iii. Twisting and drafting iv. Ringdoubler  
  b. Compare between cop build viz roving build and combination builds of package. | 08 |