THE TEXTILE ASSOCIATION (INDIA)  
A.T.A (REVISED) EXAMINATION-2019  
PART II - PAPER - A 2.1  
PRINCIPLES OF YARN MANUFACTURE  

Date: 21.12.2019       Marks: 100       Time: 2pm 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. Denier is --------- yarn numbering system.  
ii. Unit of tenacity in metric system is ---------.

iii. Rotational speed of saw teeth rollers between ----and ------ r/min.

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  

c. State true or false  
i. Lubricant added in spinning enhances spinning characteristics.

ii. Hydrophilicity is important for spinnability.

iii. Combing process improves parallelization of fibres.

iv. Carding process improves cohesion of fibres.

v. Opening of fibres helps in to removal of trash.

d. Match the following:  
i. Blowroom  a. Auto leveler

ii. Drawframe  b. Hopper feeder

iii. Combing  c. Roving

iv. Speedframe  d. Lap formation

v. Ringframe  e. Doffer, Licker-in and Flats

Q2. Write short note on the following:  
i. Blending at drawframe stage

ii. Liker-in and cylinder

iii. Yarn Numbering system

iv. Ring and traveller.

Q3. a. Describe the role of cleaning machines and condensers
b. Discuss the concepts of Piano Feed regulating motion.

Q4.  
a. State the objectives of carding. Discuss the waste collection system in carding.  
b. Give an account of Comparison of Metallic and flexible clothing in carding

Q5  
a. What are the objectives of draw frame? Explain with neat labeled sketch the working principle of 4/4 draw frame?  
b. Explain the mechanism of Auto-levelers types and performance in draw frame.

Q6  
a. Discuss the working procedure of comber with neat labeled sketch.  
b. Distinguish between flyer lead and bobbin lead. State the objectives of speedframe.

Q7  
a. Explain with working principle of TFO (two or one) twisting machine with neat labelled sketch.  
b. State the objective of ring frame. Explain the mechanism of drafting, twisting, winding and cop building operating in detail.

Q8.  
a. Explain the cone winding machine with neat labeled diagram.  
b. Write short note of the following  
   a. i. Ringdoublerr ii. Fractional efficiency of comber iii. Twisting and drafting iv. Doubling