THE TEXTILE ASSOCIATION (INDIA)
A.T.A. (REVISED) EXAMINATION - 2015
PART III - PAPER
MANMADE FIBRE TECHNOLOGY

Date: 25.12.2015  Marks: 100  Time: 10 am to 1 pm

Instructions:
1. Attempt six questions out of which Q1 is compulsory
2. Answer each next question on new page
3. Figure 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 exam hall.
7. Assume suitable data wherever necessary

Q1  COMPULSARY QUESTIONS  20 Marks
   a. Fill in the blanks:
      1. Texturising process ________ bulk of yarns
      2. Extruder converts solid polymer into ________ polymer
      3. Monomer for ________ is caprolactum
      4. Increase in amorphous content in fibre ________ breaking elongation
      5. Thermoplastic fibre ________ on heating
   
   b. Define following:
      1. Molecular orientation in fibre
      2. High wet modulus viscose fibre
      3. Regenerated fibre
      4. Moisture regain of fibre
      5. Shrinkage of fibre

Q2  a. Explain the different techniques of polymerisation  08

     b. What is the effect of molecular orientation on the characteristics of fibre?  08

Q3  a. Explain the production of polyester staple fibres along with line diagram and process parameters.  08

     b. Discuss the physical characteristics of poly(ethylene terephthalate) fibre  08

Q4  a. What is modacrylic fibre? And state the uses of modacrylic fibres  08

     b. Explain the wet spinning of poly(acrylonitrile) fibre  08
Q5  a. Describe the melt spinning process for polypropylene filament yarn along with line diagram  
   b. State the industrial applications for polypropylene fibre?  
   c. Explain about the tensile and thermal characteristics of polypropylene fibres

Q6  a. Give the classifications for textured yarns.  
    b. Explain the draw texturising process for texturising of polyester POY?  
    c. Explain the principle of air jet texturising process.

Q7  a. What is bulk of textured yarn? And how is it estimated for textured yarn?  
    b. Explain the stuffer box crimping process?  
    c. What is friction type of false twister?

Q8  a. What are blended yarns?  
    b. What is fleece blending technique? Explain it.  
    c. Describe the manufacturing of polyester/viscose blended yarn with flow chart.