

Roll No. ....  
Printed Pages : 3

**34141**

**BT-4 / M-19**  
**TEXTILE FIBER**  
**Paper-TT-210-N**

*Time allowed : 3 hours* [Maximum marks : 75]

*Note : Attempt any five questions in all, including question No. 1 which is compulsory. Select one question from each unit.*

**Compulsory Question**

1. (a) What is Monomer? 15×1=15  
 (b) What do you mean by Polymer?  
 (c) Define Elastomers.  
 (d) What do you understand by Thermoplastic?  
 (e) What do you mean by Nylon 6?  
 (f) Define Polypropylene.  
 (g) What do you mean by Solution Spinning?  
 (h) What is Melting Temperature?  
 (i) Define Glass Transition Temperature.  
 (j) What do you mean by Textile Fibre?  
 (k) What do you mean by Viscose Fibre?  
 (l) What is Acrylic Fibre?  
 (m) What do you mean by DMT Route?  
 (n) What are Dry and Wet Spinning techniques?  
 (o) Define Gas Phase Polymerisation.

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Turn over

(2)

**Unit-I**

2. With the help neat diagram, explain the amorphous and crystalline structure of fibre forming substances for Natural Textile Fibre. What are the various properties of Polymers required to be used as Natural Vegetable Fibres? 15
3. What do you mean by polymerization and its techniques? With the help of neat diagrams and suitable examples, explain Polymerisation techniques and mechanisms for synthetic fibre forming substances. 15

**Unit-II**

4. What are Man-made fibres? How Nylon fibre differs than Viscose fibres? Discuss in detail the manufacturing techniques and polymerisation of Nylon fibres/filaments that are used in Apparel sector. <http://www.kuonline.in> 15
5. What are Synthetic fibres? With the help of neat sketches, discuss the manufacturing techniques and polymerisation of Polyester fibres/Filament yarns. Also discuss the uses of Polyester fibres in Textile Apparel and Industrial sector. 15

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**Unit-III**

6. What do you understand by MELT Spinning ? How it differs with Solution Spinning ? With the help of neat diagram, explain the working principle of Textile Fibre formation using Melt Spinning techniques. 15
7. What are Solution Spinning Techniques ? With the help of neat sketches, discuss the manufacturing of filament yarns using Solution Spinning Techniques. Also discuss the effect of spinneret size on the properties of filament yarns. 15

**Unit-IV**

8. What do you mean by Wet Spinning techniques ? With the help of neat sketches, explain the filament and fibre formation techniques of Viscose yarn. Also, mention how the viscosity and spinneret size and shape affects the structure and properties of Viscose filaments/fibres. 15
9. Compare between DRY Spinning and DRY-JET Wet Spinning. With the help of neat diagram, explain the manufacturing process of any type of filament/fibre using above spinning techniques. Also, discuss the effect of spinning variables on structure and properties of such fibres/filaments.