



- 13) Directional friction in  $\mu$  value of dry wool with scale and against scale are  
 a) 0.11, 0.14      b) 0.15, 0.32      c) 0.58, 0.79      d) 0.62, 0.72
- 14) Tenacity in N/tex of Jute fibre is  
 a) 0.31      b) 0.47      c) 0.59      d) 0.75
- 15) The ratio between Elastic Extension and total extension is  
 a) Work Recovery    b) Work of Rupture    c) Elastic Recovery    d) Creep
- 16) Specific flexural rigidity in  $\text{mN mm}^2 / \text{tex}^2$  of nylon is  
 a) 0.14      b) 0.19      c) 0.44      d) 0.89
- 17) A mass specific resistance,  $R_s$  is defined as  
 a) Specific resistance in  $\Omega \text{ m} \times$  Density of material in  $\text{kg/m}^3$   
 b) Specific resistance in  $\Omega \text{ m} /$  Density of material in  $\text{kg/m}^3$   
 c) Specific resistance in  $\Omega \text{ m} +$  Density of material in  $\text{kg/m}^3$   
 d) Specific resistance in  $\Omega \text{ m} -$  Density of material in  $\text{kg/m}^3$
- 18) Typical values of fibre melting points for Nylon 6 & Nylon 6 are  
 a)  $120^\circ\text{C}$ ,  $135^\circ\text{C}$     b)  $170^\circ\text{C}$ ,  $250^\circ\text{C}$     c)  $215^\circ\text{C}$ ,  $260^\circ\text{C}$     d)  $280^\circ\text{C}$ ,  $300^\circ\text{C}$
- 19) Methods of getting rid of static charges depending upon increasing the  
 a) Resistance    b) Separation    c) Leakage    d) Drying
- 20) Thermal conductivity in  $\text{mW m}^{-1} \text{K}^{-1}$  of Polypropylene is  
 a) 340      b) 230      c) 160      d) 120

**PART B (5 x 16 = 80 Marks)**

21. a) i) what are the basic requirements for fibre formation?  
 ii) With a neat diagram explain in detail the physical and chemical structure of any one natural fibres and any one man made fibre.

**Or**

- b) i) Brief about the various methods for the investigation of fibre structure.  
 ii) With neat sketch explain in detail any one of the measuring instrument to investigate the fibre structure.

22. a) i) what do you mean by "Absolute Humidity" and "Relative Humidity".  
 ii) Explain in detail the measurement of region and determination of correct invoice mass in fibres.

**Or**

- b) i) what do you mean by "Heats of Sorption" and "Swelling of Fibres".  
 ii) Explain in detail the mechanism of conditioning process. Also discuss the factor influencing rate of conditioning of fibres.

23. a) i) Define the terms "Initial Modulus" and "Work of rupture".  
 ii) With curves explain in detail the stress – strain behavior of various textile fibres and their significance.

**Or**

b) i) Define the terms "Torsional Rigidity" and "Flexural Rigidity" .

ii) Explain in detail with necessary diagram the measurement technique for flexural rigidity of fibres and its relation to other fibre properties.

24. a) What you mean by refractive index of fibres Bi refraction with neat sketch explain the measuring technique of the same and also discuss its influence on fibre orientation, density and regain.

**Or**

b) State Amonton's law of friction. Discuss how friction of fibres can be measured. Also discuss the role of friction in fibre processing.

25. a) Brief explain about electrical resistance of fibres. Explain in detail how electrical resistance in fibres can be measured. Also discuss the various factor influence the electrical resistance of the fibres.

**Or**

b) i) what are thermal properties. Explain in detail the structural changes in fibres on heating.

ii) Explain the flammability characteristics of fibres.

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