



RN-8233

B. E. II (Sem. IV) (Textile Processing)

Examination

May / June – 2010

Fibre Physics

(New Scheme)

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दर्शाविए निशानीवाणी विगतो उत्तरवही पर अवश्य कर्णी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="checkbox"/> B. E. 2 (Sem. 4) (Textile Processing)	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="checkbox"/> Fibre Physics (New Scheme)	<input type="text"/>
Subject Code No. : <input type="text"/> 8 <input type="text"/> 2 <input type="text"/> 3 <input type="text"/> 3	<input type="text"/>
Section No. (1, 2,.....) : <input type="text"/> 1&2	
	Student's Signature

- (2) Answers to the **two** sections must be written in **separate** answer books.
- (3) Figures to the **right** indicate **full** marks.
- (4) Tie **two** sections separately.

SECTION – I

- 1 (a) Answer the following **objective** questions : 10
- H-bonds are weaker than Co-valent bonds. True or False, justify if false.
 - What happens when a molecule absorbs infrared radiation ?
 - Crystallinity decreases with increase in temperature. True or False, justify if false.
 - What is the use of IR spectrometer ?
 - Define : Mass specific resistance.
 - Lycra is composed of segmented _____.
 - Which fibers are used in ballistic clothing ?
 - Fibre friction is responsible for holding together the fibers in spun yarn. True or False, justify if false.
 - Define : Infrared dichroism.
 - _____ device is used to coat the SEM sample with gold ?
- (b) Explain in detail the scanning electron microscope 10
with neat diagram.

- 2 (a) Enlist methods of investigation of fibre structure, explain X-ray diffraction with examples. 10
 (b) Write a note on Electrolytic effects. 5

OR

- 2 What is spectroscopy? Explain IR and NMR spectroscopy. 15
 3 Write short notes on any **three** of the following : 15
 (a) Hydrogen bonding
 (b) Refractive index and birefringence
 (c) Shish kebab structure
 (d) Glass transition temperature.

SECTION – II

- 4 (a) Answer the following **objective** questions : 10
 (i) Elastomeric fibers have highest breaking extension %. True or False.
 (ii) Define : Absolute humidity.
 (iii) Moisture content = _____.
 (iv) Heat of wetting is better known as _____.
 (v) Unit of stress is _____.
 (vi) Define Elongation at break.
 (vii) Give the density of cotton and viscose rayon.
 (viii) Give formula of degree of order.
 (ix) The moisture regain of Nylon fibre is _____.
 (x) The standard temperature atmosphere is defined as _____ % R.H. and _____ °C.
 (b) Explain load-elongation and stress-strain curves and discuss quantities and units for the same. 10
- 5 (a) Explain creep, primary and secondary creep. Discuss Landerman's experiments on primary creep. 10
 (b) Discuss the factors determining the results of tensile experiments. 5

OR

- 5 Explain Initial modulus, Work factor and Yield point in detail. 15
 6 Write short notes on any **three** of the following : 15
 (a) Stress-strain properties of HM-MT fibers
 (b) Bowden and Leben apparatus
 (c) Flexural rigidity
 (d) Thermal parameters.