



SF-8198

B. E. - II (Sem. IV) (T.P.) Examination

May / June - 2011

Fibre Physics

(New Syllabus)

Time : 3 Hours]

[Total Marks : 100

Instructions :

(1)

नीचे दृशविवेक निशानीवाणी विगतो उत्तरवही पर अवश्य कभवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="B. E. - 2 (SEM. 4) (T.P.)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="FIBRE PHYSICS (NEW)"/>	<input type="text"/>
Subject Code No. : <input type="text" value="8"/> <input type="text" value="1"/> <input type="text" value="9"/> <input type="text" value="8"/>	<input type="text" value="Student's Signature"/>
Section No. (1, 2,.....) : <input type="text" value="1&2"/>	

- (2) Answers to the two sections must be written in same answer book.
(3) Figures to the right indicate full marks.

SECTION - I

- 1 (a) Answer the following objective questions : 10
- What is the advantage of IR Spectroscopy over X-ray diffraction ?
 - For a textile fibre the length : width ratio must be minimum _____.
 - $X_c\% =$ _____.
 - H-bonds are weaker than Co-valent bonds. True or false, justify if false.
 - Define : Electrical resistance.
 - What is wave number ?
 - Fibre friction is responsible for holding together the fibres in spun yarn. True or false, Justify if false.
 - Drawing of Nylon_____ the crystallinity.
 - In X-ray diffraction, defused bands correspond to _____ region.
 - What is the function of Sputter coater ?

- (b) Explain in detail the X-ray diffraction technique used to investigate fibre structure. Analyze the diffraction photographs of different fibres. **10**
- 2** (a) Enlist methods of investigation of fibre structure and explain principle, construction and working of Infrared Radiation. **10**
- (b) Write a note on reflection and luster. **5**

OR

- 2** What is microscopy ? Explain any two electron microscopes with neat diagram. **15**
- 3** Write short notes on any three of the following : **15**
- (a) Measurement of electrical resistance
- (b) NMR technique
- (c) Electrolytic effects
- (d) Fringed micelle structure.

SECTION - II

- 4** (a) Answer the following objective questions : **10**
- (i) High tenacity viscose rayon has breaking extension of ____%.
- (ii) Define : Vapour Pressure.
- (iii) Define : Moisture Content.
- (iv) Heat of absorption is also known as _____.
- (v) Elastomeric fibres have highest breaking extension %. True or False.
- (vi) Define : Absolute humidity.
- (vii) Moisture Content = _____.
- (viii) Heat of wetting is better known as _____.
- (ix) What is the function of Sputter coater ?
- (x) What is Moisture Regain ?

- (b) Explain Load-elongation and stress-strain curves and discuss quantities and units for the same. **10**
- 5** (a) Define and discuss Elastic recovery. Also discuss Mechanical conditioning and swelling recovery. **10**
- (b) Explain Dielectric constant. **5**
- OR**
- 5** Discuss the relation between REGAIN and RELATIVE HUMIDITY. Explain the effect of temperature on absorption of cotton. **15**
- 6** Write short notes on any three of the following : **15**
- (a) Elastomeric fibres
- (b) Dynamic capstan method
- (c) Creasing
- (d) Effect of orientation on mechanical properties.
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