Roll No. ..... Total Pages : 03

July-22-00291

B. Tech. EXAMINATION, 2022

Semester V (CBCS)

PROPERTIES OF FIBER

TE-506

Time : 3 Hours *Maximum Marks : 60*

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt *Five* questions in all, selecting *one* question from each Sections A, B, C and D. Q. No. **9** is compulsory.

Section A

1. Write a short note on modified fringed micellar theory and chain folding. **10**

2. How can you measure crystallinity in fibers by IR spectroscopy method ? Also identify the chemical structure by IR spectroscopy. 4+6

Section B

3. (a) What is importance of heat of sorption ? 6

   (b) Explain Swlling of fibers. 4

4. What is nature of friction ? Why friction is necessary ? Differentiate between static and kinetics friction. 10

Section C

5. Explain primary and secondary creep with the help of diagram and examples. 10

6. Discuss the dielectric properties and the effect of different parameters on dielectric properties. 10

Section D

7. Explain the concept of electrical conductivity. What is the effect of different factors on the electrical resistance of fibers ? 10

8. Explain the thermal transitions during structural changes. 10

(Compulsory Question)

9. (i) Factors affecting glass transition temperature.

   (ii) Define reflection and lustre.

   (iii) What do you understand by birefringence ?

   (iv) Factors influencing results of tensile experiment.

   (v) Bending properties of fiber.

   (vi) Explain fiber fracture.

   (vii) Define degree of order and degree of orientation.

   (viii) Specific work of rupture.

   (ix) "Any thermal transition causes a setting effect in fibers." Explain.

   (x) "Fibers have negative thermal expansion coefficient." Explain. 10×2=20