J-21-0015

B. Tech. EXAMINATION, 2021

Semester V (CBCS)

PROPERTIES OF FIBRE

TE-506

Time : 2 *Hours*　　　　　　　　*Maximum Marks* : 60

The candidates shall limit their answers precisely within 20 pages only (A4 size sheets/assignment sheets), no extra sheet allowed. The candidates should write only on one side of the page and the back side of the page should remain blank. Only blue ball pen is admissible.

Note : Attempt *Four* questions in all, selecting *one* question from any of the Sections A, B, C and D. Q. No. **9** is compulsory. Use of non-programmable calculators is allowed.

Section A

1. What do you understand by degree of orientation ? Explain the theory of chain folding with suitable figures. **15**

2. Discuss the method of identification physical structure by X-ray. **15**

Section B

3. (a) What do you understand by the term Humidity, Moisture content and Moisture regain ? **10**

(b) What is the relation between Moisture regain and Relative humidity ? **5**

4. What is the importance of measuring fiber friction ? Differentiate in between static and dynamic friction with examples. **15**

Section C

5. Discuss about different factors that influencing result of tensile experiment. **15**

6. What do you understand by dielectric properties ? Discuss the effect of different parameters on dielectric properties. **15**

Section D

7. Discuss the basic concept of electrical resistance and the effect of different factors on the electrical resistance of fibers. **15**

8. What do you understand by refractive index, birefringence and orientation of fiber ? **15**

(Compulsory Question)

9. (i) What do you understand by refractive index ?

(ii) How can we get rid of the static charge generation problem in textile material ?

(iii) What do you understand by stress-relaxation ?

(iv) Why does glass fiber have no birefringence ?

(v) What do you understand by swelling anisotropy ?

(vi) Explain weak link theory.

(vii) What is the unit of dielectric constant ?

(viii) What do you understand by double refraction ?

(ix) What do you understand by glass transition temperature ?

(x) What do you understand by dichroism ?

$1\frac{1}{2} \times 10 = 15$