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B.Tech. (Textile) (2011 Onwards) (Sem.-5th)

PROPERTIES OF FIBRES

Subject Code : BTTE-501

Paper ID : [A2730]

Max. Marks : 60

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt **ANY FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt **ANY TWO** questions.

1. Answer in brief :

- a) Define birefringence of fibre. What is its significance?
- b) Define torsional rigidity of fibre.
- c) What do you understand by correct invoice weight?
- d) Define heat of wetting.
- e) Write down the name of any four methods of measurement of physical structure of textile fibre.
- f) Define work of rupture. What is its measurement unit?
- g) Differentiate degree of order and degree of orientation.
- h) What is the resolution of a microscope? What is its value for an electron microscope?
- i) What do you mean by breaking length of fibre? What is its measurement unit?
- j) Define mass specific electrical resistance of fibre.

SECTION-B

2. Define moisture regain and moisture content of textile fibres and establish relationship between them.
3. Explain first order and second order thermal transitions. Give examples.
4. Write a short note on heat setting of textiles.
5. Draw a typical creep recovery curve of a visco-elastic material and discuss primary creep and secondary creep.
6. Describe Maxwell model to characterize the visco-elastic behavior of fibre.

SECTION-C

7. Define static and dynamic friction. How do you measure static and dynamic friction? Explain capstan method of measuring yarn friction. (2,4,4)
8. What are the consequences of generation static charge during processing and end-use of textiles? Describe a method of measuring static charge in card sliver. (6,4)
9. Describe the factors affecting the dielectric properties of fibre. Discuss about the parameters by which physical structure of fibre can be described. (5,5)