

Total No. of Pages : 02

Total No. of Questions : 09

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

PROPERTIES OF FIBRES

Subject Code : BTTE-501

M.Code : 71622

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

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.**

SECTION-A

1. Answer in brief :

- a) What is the use of electron microscopy in textiles?
- b) What do you mean by stress relaxation?
- c) How crystallinity of a fibre can be assessed from density?
- d) What is dichroic ratio?
- e) What is weak-link effect?
- f) How static charge can be controlled in textiles?
- g) What will be the moisture regain of a fibre having moisture content of 10%?
- h) Draw and compare load-elongation curves of dry and wet cotton fibre.
- i) What is glass transition temperature?
- j) Explain yield point in load elongation curve of textile fibre.

SECTION-B

2. Discuss hysteresis of moisture absorption with graphical illustration.
3. State the principle of IR spectroscopy. What is its use in structural investigation of textiles?
4. What is the significance of friction in textiles? Explain a method of measurement of yarn to metal friction.
5. Explain Maxwell model to characterize visco-elastic behavior of material.
6. Define birefringence. How it can be measured?

SECTION-C

7. Describe X-ray diffraction methods of measurement of crystallinity and orientation of textile fibre in detail.
8. Write down the factors affecting the results of tensile test. Draw creep recovery curve and explain. 5+5
9. What do you mean by static and dynamic tensile testing? Describe a test method of measurement of dynamic modulus of textile material. 3+7

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.