

SECTION - D

7. Give the introduction, significance and measurement of static electricity. Also discuss the Anti-static treatment. (6+4=10)
8. Explain the free-volume theory. Also list various factors affecting melting temperature. (6+4=10)

SECTION - E

9. (i) Define absorption and dichroism.
(ii) What is the technological importance of fiber?
(iii) Define degree of order and degree of orientation.
(iv) Explain in brief identification of chemical structure by IR spectroscopy.
(v) Define cyclic testing.
(vi) Explain the static phenomena.
(vii) Write the properties of fiber.
(viii) Explain the structural changes on heating.
(ix) List various torsional properties of fiber.
(x) What do you understand by heat of sorption? (10×2=20)

Dec.-22-0231

TE-506 (Properties of Fiber)

B.Tech. 5th (CBCS)

Time : 3 Hours

Max. 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 section A, B, C and D. Section E is compulsory.

SECTION - A

1. Explain the two phase models. (10)
2. What is X-ray? Identify the physical structure using electron microscopy. (10)

SECTION - B

3. (a) Explain the quantitative theory of moisture absorption. (6)
(b) What is the effect of stress and temperature on regain? (4)
4. (a) Derive the relation between regain and relative humidity. (4)
(b) Discuss the factors affecting coefficient of friction. (6)

SECTION - C

5. (a) Explain weak link effect theory and elastic recovery. (5)
(b) Explain the effect of external and structural factors on stress-strain behaviour of fibers. (5)
6. Explain the models of viscoelastic behaviour. (10)