[Total No. of Questions - 9] [Total No. of ... ited Pages - 2]
(2126)

16206(D) - 0 DEC 2016

B. Tech 7th Semester Examination

Mechanics of Textile Process (NS)

TE-413

Time : 3 Hours **Max. Marks : 100**

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. Select one question from each section A, B, C, D. Section E is compulsory.

SECTION - A

1. Draw a cam profile for 2/2 twill with the following parameters : min. distance between cam and follower center=4 cm, follower dia. = 2.5 cm, max. lift = 5 cm (20)

2. Explain how shed geometry is affected by early shedding and let shedding. (20)

SECTION - B

3. Explain the building mechanism of a speedframe with reference to Riter type of simplex (20)

4. Derive the equation $T = T_0 - \frac{mr^2\omega^2}{2}$ where T_0=spinning tension in lappet hook, T=spinning tension at balloon, m=linear density of yarn, r=radius of balloon, ω=angular speed. (20)

SECTION - C

5. Calculate the length of doffing arc and describe its significance. (20)

6. Explain theories behind hook formation in carding. How machine and material is affecting the formation of hooks? (20)

SECTION - D

7. Explain bumping condition and explain the remedies of bumping condition in weaving. (20)

8. Explain the theories behind shuttle checking and how can we reduce the peak retardation force in shuttle checking. (20)

SECTION - E

9. (i) Give an estimate of fibre configuration.

   (ii) Why the sley is given a motion different from simple harmonic?

   (iii) State tension controlling techniques in winding.

   (iv) Explain the advantages of sectional warping over beam warping.

   (v) State the consequence of a non-uniform lap.

   (vi) What is the significance of alacrity?

   (vii) Explain the advantage conjugated cam beat-up mechanism over conventional beat-up.

   (viii) Explain how pick density is affected by height of back rest roller.

   (ix) Explain the degree of opening in blow room.

   (x) What is the difference between early and let shedding?

   (2×10=20)