



Name :
Roll No. :
Invigilator's Signature :

CS / M.TECH (TT) / SEM-2 / MTT-204/ 2011

2011

TECHNOLOGY OF FABRIC FORMING

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Answer any *five* questions. $5 \times 14 = 70$

1. Why are warp tension and package density controls so important throughout the preparatory process ? What steps are taken for these types of process controls in modern winding machine ? 14

2. a) Why is the squeezing rollers nip in the size box not an isolated nip ? 3

b) What are the different factors controlling tension in warp sheet entering in drawing roller nip ? 3

c) Elaborate the basic principle of 'Shirley Stretch Regulator' in sizing machine. 8



3. a) Calculate the braking torque range of the warp beam carrying 500 warp ends (each under tension of 25 g) with barrel diameter 12 cm. The maximum beam diameter is 50 cm. The braking radius of the brake arrangement is 10 cm. The coefficient of friction between band on the rim of the brake is 0.2 with a warp angle of 180° . 8
- b) Explain the mechanism of tension control in the unwinding ϕ ' zone for the back beam at creel of sizing machine. (constant tension let-off motion for back beam). 6
4. Derive the mathematical theory of Automatic size regulation in size box. 14
5. a) Prepare a table including all parameters affecting the percentage of size applied to a warp. 5
- b) Explain the effect of the negatively driven drying cylinder and the force to split the sized warp sheet on the tension level of warp yarn. 3
- c) How does the density of warp sheet (space between adjacent warp ends) influence the application of size paste on warp sheet ? 3
- d) Explain the concept of pre-drying of wrap sheet. 3



6. a) Calculate the drying capacity of a sizing machine. 6
- b) Discuss about the factors affecting the drying capacity of a cylinder driver. 8
7. What are the factors that affect pick spacing variation in weaving process ? Why is negative let-off motion not capable of controlling uniform warp tension ? What should be an ideal warp cloth control system ? What advantages are expected from this ideal (warp cloth control) system ? 14
8. a) 'Positive let-off system is incorporated in high speed modern loom.' Explain its economical advantage. 6
- b) What is the importance of asymmetric shedding in weaving of lighter fabric ? 3
- c) What fabric fault will occur in case of a soft size beam with less moisture content ? 5

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