



Name :
Roll No. :
Invigilator's Signature :

CS / M.TECH (MCP) / SEM-2 / MCP-203/ 2011

2011

TEXTILE AUXILIARIES AND CHEMICALS

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 × 14 = 70

1. What do you mean by the term 'mordant' ? Under what condition the substrate is mordanted ? How can it increase the affinity of the substrate ? Through an application prove that mordanting of cellulose increase the affinity of dye towards it. 2 + 3 + 9

2. Define surface tension. What are the forces acting during surface tension ? What are the factors upon which the surface tension depends on ? Discuss the factors. 2 + 2 + 3 + 7

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3. Name five cases where (i) we use auxiliaries (ii) we use chemicals and (iii) we use both auxiliaries and chemicals. Describe the effect of delustrant on physical properties of textile fibres. What is T_g ? How is the T_g of a substrate related to the auxiliaries present within the solution ?

5 + 2 + 2 + 5

4. What do you understand by nano-particle ? Why are nano-particles important from processing point of view ? Discuss different aspects of functional finishing using nano-technology ?

2 + 4 + 8

5. Define solubility index of a material. What do you mean by SI curve ? Show two SI curves of solids and gaseous materials. Why is the solubility index of potassium chloride higher than that of sodium chloride ? Why is the nature of SI curve different from solid to gas ? What are the factors upon which the solubility index of a material depends ?

2 + 2 + 2 + 2 + 2 + 4



6. Draw the load elongation curve of a textile fibre. How is the load elongation curve affected by the chemical treatment of the same fibre ? How can the load-elongation curve be converted into stress – strain curve ? What are the mechanical properties influenced by the stress – strain curve when the same fibre is treated with DMDHEU ?

2 + 4 + 2 + 6

7. Define chemicals and auxiliaries. Differentiate between the two in respect of their activity. Give examples of some chemicals and auxiliaries (at least five for each) mentioning their functions. Briefly explain that all auxiliaries are chemicals but all chemicals are not auxiliaries.

2 + 2 + 5 + 5

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