

**CS/B.TECH(TT-NEW)/SEM-4/TT-403/2012**

**2012**

**TEXTILE CHEMICAL PROCESSING – I**

*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.*

**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct answers of the following :

10X1 = 10

i) In which form of textile material generally is not signed ?

a) Woven fabric b) Yarn

c) Fibre d) Knitted fabric.

ii) Which of the following singeing methods does not related to burning of protruding fibre ?

a) Gas singeing

b) Rotary singeing

c) Plate singeing

d) Bio-singeing.

iii) Continuous desizing process is possible by using which of the following processing machines ?

a) Kier b) Pad-J-box

c) Whinch d) Jigger

iv) Which of the following agents is used for oxidative desizing ?

a) Mineral acid b) Amylase enzyme

- c) Pectinase enzyme d) Bromite.
- v) During scouring of cotton textile, waxy materials are removed by converting them into
- a) Emulsion b) Soap
- c) Soluble product d) Precipitated product.
- vi) Scouring is done to remove which of the following froms of the cotton fabric ?
- a) Starch b) Colouring matters
- c) Protruding fibre d) Oils, fats, waxes etc.
- vii) Degumming is a process which is related with which of the following materials ?
- a) Cotton b) Silk
- c) Wool d) Polyester.
- viii)  $\text{NaClO}_2$  bleaching agent acts on
- a) Basic pH b) Neutral Ph
- c) Acidic pH d) All pH.
- ix) Bleaching is done on textile material
- a) To remove colouring matters
- b) To convert colouring matters into colourless compound
- c) To increase strength
- d) To increase dye ability.
- x) Which of the following terms is not related with mercerization ?
- a) Lustre b) Strength
- c) Dye-uptake d) Whiteness.

**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following.  $3 \times 5 = 15$

2. a) What is 'cloud point' of a surfactant?  
 b) What role does it play in the chemical processing of textiles and how can it be controlled ? 1 + 4
3. a) How does jute scouring differ from cotton scouring ?  
 b) How do you classify different bleaching agents ? 2 + 3
4. Compare the relative merits and demerits of hypochlorite and chlorite bleaching. 5
5. a) How does wool scouring differ from cotton scouring ?  
 b) What is the preferred scouring agent for jute fibre and why ? 3 + 2
6. a) Why is heat-setting necessary ?  
 b) What is the preferred stage at which heat-setting should be done ? Justify your statement. 1 + 4

### **GROUP – C**

#### **( Long Answer Type Questions )**

Answer any *three* of the following. 3X15 = 45

7. a) Give the flowchart of the wet processing sequences that a cotton fabric must undergo for obtaining a printed finished fabric with white background. Also give the objective of each stage. 2 + 8  
 b) Discuss the mechanism of increasing the whiteness of textile materials by optical whitening agents ? 5
8. a) Describe the functioning of a gas-singeing machine along with its merits and demerits over others.  
 b) Give necessary labelled diagram.  
 c) Why singeing of synthetic fabric is done after the dyeing ? 8 + 4 + 3
9. a) Describe the complete method of obtaining full white cotton fabric with special emphasis on bleaching

process.

b) Give necessary labelled diagram.

c) What are the merits and demerits of solvent scouring

over conventional scouring ?

8 + 4 + 3

10. a) Why is mercerization carried out ?

1

b) Is it an essential process ? Justify your statement.

1 + 2

c) Discuss different factors associated to mercerization.

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11. Write short notes on any *two* of the following :  $2 \times 7 \frac{1}{2}$

a) Hot mercerisation

b) Enzymatic silk degumming

c) Heat-setting of synthetic fabric

d) Wool scouring

e) Effect of pH on hypochlorite bleaching of cotton.

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