



(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 164409

Roll No.

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B. Tech.

(SEM. IV) THEORY EXAMINATION, 2014-15
TEXTILE CHEMISTRY - I

Time : 3 Hours]

[Total Marks : 100

- Note:**
- (1) Attempt all questions
 - (2) All questions carry equal marks
 - (3) Be precise in your answer.

- 1 Attempt **any four** of the following: **4×5**
- (a) Describe the function of Pre-Drying cylinder and quenching box in Singeing.
 - (b) What kind of enzymes is suitable for desizing cotton fabric? Describe the mechanism involved in enzymatic desizing.
 - (c) Describe the mechanisms involved in cotton scouring.
 - (d) Give the process sequence for P/C blended fabric.
 - (e) Why Hydrogen Peroxide is called 'Universal Bleaching' agent?
 - (f) Describe the effect of pH on the bleaching action by Sodium Hypochlorite.

2 Attempt **any Two** of the following:

- (a) Cotton fabric has to be scoured in continuous scouring and bleaching machine with addition of 4 % caustic soda and 3% hydrogen peroxide on weight of fabric. Calculate the concentration of hydrogen peroxide and caustic soda in grams per liter required in the padding trough. Assume expression 80%.
- (b) How strength of Sodium Hypochlorite is determined? Describe the bleaching process of Cotton with Sodium Chlorite
- (c) Describe the working of continuous scouring and bleaching by steamer roll bed principle with process parameters.

3 Attempt **any Two** of the following:

- (a) Lac dye acts as acid dye as well as mordant dye: Explain. How Red shade is obtained using Lac dye?
- (b) What is the difference between natural indigo and synthetic indigo? How natural indigo dye is extracted and applied to cotton?
- (c) Describe the natural dye extraction process for bulk production with importance of every step.

- 4 Attempt **any Two** of the following:
- (a) What are the impurities removed in yarn scouring? Describe the controlling parameters in tape scouring process of carpet yarn.
 - (b) What is the role of salt and soda in direct dyeing? What are the factors responsible for the substantivity of this dye towards cellulosic?
 - (c) Describe the fastness properties of direct dyes. How wash fastness of these dyes are improved?

- 5 Attempt **any Two** of the following:
- (a) What type of retarders do you prefer for dyeing acrylics with Cationic dyes and why? Describe the dyeing procedure of acrylics with this dye.
 - (b) What are high substantive naphthols? How naphthols are made soluble and applied to cotton fabric? What are the precautions taken during this process?
 - (c) Describe the reactions of diazotization and coupling reactions with suitable example. State the fastness properties of azoic colours.