

**B TECH
(SEM IV) THEORY EXAMINATION 2017-18
TEXTILE CHEMISTRY - I**

Time: 3 Hours

Total Marks: 100

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

- 1. Attempt *all* questions in brief. 2 x 10 = 20**
- a. Explain any two impurities in textiles.
 - b. What is singeing?
 - c. What is the purpose of bleaching of textiles?
 - d. Explain the role of natural dyes.
 - e. What is the role of mordants?
 - f. Explain yarn scouring.
 - g. Difference between direct and basic dyes.
 - h. Explain diazotization.
 - i. What are azoic colours?
 - j. Role of additives in dyeing.

SECTION B

- 2. Attempt any *three* of the following: 10 x 3 = 30**
- a. Describe the important sections of a gas-singeing machine.
 - b. What are the advantages of scouring in steamer-roll bed principle? Describe such a machine and process details.
 - c. What are mordant dyes? Describe various mordants.
 - d. How fibre structure is responsible for accepting the dyes?
 - e. Describe the effect of pH on bleaching action by sodium hypochlorite.

SECTION C

- 3. Attempt any *one* part of the following: 10 x 1 = 10**
- (a) Give the process sequence for 100% cotton mercerized fabric with importance of each step.
 - (b) Why is the role of alkali in scouring of cotton? Discuss the process of evaluation of scouring of cotton?
- 4. Attempt any *one* part of the following: 10 x 1 = 10**
- (a) Discuss the process of bleaching of cotton with sodium chlorite. How will you check strength of sodium hypochlorite?
 - (b) Describe drying mechanisms in Cylinder Drying Range, Radio Frequency Dryer and Hot Flue Dryer.
- 5. Attempt any *one* part of the following: 10 x 1 = 10**
- (a) Describe the steps in natural dye extraction process for bulk production. Also

discuss the importance of each step.

- (b) Describe the various classifications of natural dyes with respect to source and chemical structure.

6. Attempt any *one* part of the following:

10 x 1 = 10

- (a) Explain the fastness properties of direct dyes. What are their roles in dyeing process?
- (b) Describe the tape scouring process of carpet yarn with important process parameters and their roles.

7. Attempt any *one* part of the following:

10 x 1 = 10

- (a) What is diazotization reaction? Describe its significance in producing dyes. Describe application of any base on cotton fabric.
- (b) What are retarders and why are they needed in dyeing process? How does it work?