

**GUJARAT TECHNOLOGICAL UNIVERSITY****B.E. Sem-III(Textile Technology)Examination December 2009****Subject code: 132904****Subject Name: Textile Processing I****Date: 23 / 12 / 2009****Time: 11.00 am – 1.30 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** What are the functions of a bleaching department? Explain briefly tendering or degradation of bleached fabric with possible causes from singeing to bleaching. Describe briefly the different methods of estimating degradation of the bleached fabric. **14**
- Q.2 (a)** Explain important factors and precautions to be taken during package dyeing. **07**
- (b)** Describe step-wise dyeing process of vat dyes. **07**
- OR**
- (b)** Describe step-wise dyeing process of reactive dyes. **07**
- Q.3** Discuss the factors affecting rate of dyeing and describe any two from the following dyeing machines : **14**
- (i) Jigger (ii) Jet (iii) Winch.
- OR**
- Q.3** What are the main objectives of a dyeing department? Explain the following terms and establish relationship among them : **14**
- 1) Shade percentage 2) M.L.R. 3) Concentration of a dye bath 4) Exhaustion of a dye bath.
- Q.4 (a)** Discuss sodium hypochlorite bleaching( $\text{NaOCl}$ ) in relation to (i) Self decomposition (ii) Process parameters. **07**
- (b)** State and explain recipe and processing conditions for Hydrogen peroxide( $\text{H}_2\text{O}_2$ ) bleaching. **07**
- OR**
- Q.4 (a)** Describe chainless padless mercerising machine with a neat sketch. **07**
- (b)** What is scouring? Which types of impurities are removed by the scouring process? How? **07**
- Q.5 (a)** Explain enzyme desizing with continuous process. **07**
- (b)** Describe dyeing process for Direct dyes with methods of improving fastness properties. **07**
- OR**
- Q.5 (a)** Explain the following terms : **07**
- i) Singeing ii) Shearing
- Describe gas singeing machine with precautions to be taken during singeing.
- (b)** By which process will you dye the following fabric? Why? Which dyes will you use? **07**
- Fabric quality – 80 gms/m<sup>2</sup> of cotton fabric having width 1.5 meter  
Length – 10000 meter  
Shade – 2% Indigo
- Calculate (i) Volume of the liquor in litres used in the fabric if M.L.R. is 1:1 and wet pick up of 80% after padding.  
(ii) The concentration (gpl) of the dyebath.

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