

**GUJARAT TECHNOLOGICAL UNIVERSITY****B. E. Sem. - V - Examination – June- 2011****Subject code: 152805****Subject Name: Production and Applications of Colorants and Auxiliaries****Date: 30/06/2011****Time: 10:30 am – 01:00 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** (a) Explain in detail Coal-tar distillation process with neat diagram. **07**  
(b) What is sulphonation? Explain in detail with suitable examples. **07**

- Q.2** (a) Give the definition of color. Discuss Witt's theory in detail. **07**  
(b) Explain Dow and Cumene process in detail with chemical reactions. **07**

**OR**

- (b) What are indigo dyes? Describe Sandmeyer's process for manufacturing of the same. **07**

- Q.3** (a) Discuss non-textile uses of the dye stuff in detail. **07**  
(b) Give the classification of textile auxiliaries. Explain the meaning of surfactant and its mode of action. **07**

**OR**

- Q.3** (a) Give any two examples of Vat dyes with its manufacturing chemical reactions. **07**  
(b) Explain the phenomenon of wetting, detergency and emulsification with examples from textile processing. **07**

- Q.4** (a) Define anionic surfactants. Discuss carboxylate base anionic surfactants in detail. **07**  
(b) Describe the process of manufacturing of Dodecyl benzene sulphonate. **07**

**OR**

- Q.4** (a) Describe the manufacturing process for TRO with its application in textile processing. **07**  
(b) Define cationic surfactants. Discuss the chemistry and applications of quaternary ammonium compounds. **07**

- Q.5** (a) Define non ionic surfactants. Give some advantageous properties of it. Discuss HLB and cloud point. **07**  
(b) Explain Dye fixing agents, Leveling agents and dispersing agents. **07**

**OR**

- Q.5** (a) Classify non ionic surfactants. Explain Alcohol Ethoxylates and Nonyl phenol Ethoxylates. **07**  
(b) Discuss about Carriers, Buffers and discharging agents. **07**

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