

**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

\*\*\*\*\*