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SE-6887

B. E. III (Sem. V) (Textile Processing) Examination

April / May – 2011

Chemistry of Surface Active Agents

Time : **3** Hours] [Total Marks : **100**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **B. E. 3 (Sem. 5) (Tex. Proc.)**

Name of the Subject :

☛ **Chemistry of Surface Active Agents**

☛ Subject Code No. : **6 8 8 7** ☛ Section No. (1, 2,.....) : **1, 2**

Seat No. :

Student's Signature

(2) Answers to the two sections must be written in same answer book.

(3) Figures to the right indicate full marks.

SECTION - I

1 (a) Answer the following objective questions : **10**

(1) Carboxylate soaps get precipitated by addition of alkali. - True/False, correct if false.

(2) Why mercury does not wet the glass ?

(3) Anionic softeners are not widely used for cotton fabric finishing - True/False, Justify.

(4) SLS is a nonionic surfactant, true or false ? Corect if false.

(5) What are micelles ?

(6) What is difference between levelling agent and retarding agent ?

(7) State the mathematical expression for surface tension.

(8) Define : H.L.B.

(9) What is meant by NP-20 ?

(10) Give the chemical name and structure of Dedanol OT.

(b) Explain what is meant by CMC and state the effect of chemical structure on CMC. **10**

2 (a) Classify anionic surfactants. Discuss the chemistry, properties and applications of carboxylates. **10**

(b) Explain with proper illustrations the application of surfactant as rubbing fastness improver. **5**

OR

2 Write a critical review on the theory of surface activity and hydrophilic-lyophilic balance. **15**

3 Write short notes : (any **three**) **15**

(a) Speciality surfactants

(b) Finishing softeners

(c) Phosphate esters

(d) Emulsification.

SECTION - II

4 (a) Answer the following objective questions : **10**

(1) _____ is the quantitative expression for surface tension.

(2) Sodium stearate is a carboxylate soap, true of false ?

(3) Which surfactant is available as a byproduct of paper industry ?

(4) Give the reaction scheme for the action of fixanol C in direct dyeing of cotton.

(5) What is the ionic nature of dye fixing agents used for direct dyes ?

(6) What is dedenol OT paste chemically ?

(7) Why ethoxylates possess cloud point ?

(8) Cloud point of ethoxylates _____ with increase in EO content.

(9) Name one non-surfactant based levelling agent used in acid dyeing of nylon.

(10) N.P. 20 can act as a good solubelizer, true or false ?

(b) Describe various technical aspects of foaming. **10**

5 Give characteristic properties of non-ionic surfactants. Discuss the chemistry, properties and applications of nonyl phenol ethoxylates. **15**

OR

5 Give a general classification of surfactants. Discuss chemistry, properties and applications of cationic surfactants. **15**

6 Write short notes : (any **three**) **15**

(a) Dye fixing agent

(b) Amphoteric surfactants

(c) Solubility and Kraft point

(d) Sulphosuccinates.