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RN-6887

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

May / June – 2010

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) (Textile Processing)**

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 **separate** answer books.

(3) Figures to the right indicate full marks.

(4) Tie **two** sections **separately**.

SECTION - I

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

(i) What are drawbacks of soap?

(ii) Define : What is meant by foam?

(iii) Give an example of non-surface agent based chemical that reduce surface tension.

(iv) Define what is meant by surface tension.

(v) Cationic surfactants are not used in detergent formulations - True or False.

(vi) State the chemical structure of Fixanol C (ICI).

(vii) The packing ratio p < 1 gives _____ kind of emulsion.

(viii) Give one commercial example of dispersing agent.

(ix) Define : Critical Micelle Concentration.

(x) The ingredient in detergent formulation that prevents the redeposition of soil is known as _____.

(b) Explain in detail the application of surface active agents as levelling and retarding agents in different dye - fibre sytems with examples. **10**

2 (a) Describe various technical aspects of foaming. **10**

(b) Describe the mechanism of surface activity. **5**

OR

2 Discuss in detail the angle of contact on wetting of fabrics and removal of waxes from the fabric surfaces. **15**

3 Write short notes on any **three** of the following : **15**

(a) Solubilization

(b) State the effect of chemical structures of surfactants on their CMC.

(c) Cationic softeners

(d) Solubility and Kraft point.

SECTION - II

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

(i) Carboxylate soaps get precipitated by hardness in water. - True/False, correct if false.

(ii) OT paste is an _____ surfactant.

(iii) Ionic nature of the amphoteric surfactant changes with the pH, true or false?

(iv) Anionic surfactants possess good compatibility, true or false? Correct if false.

(v) Which oil is the richest source for lauryl alcohol?

(vi) Cloud point of a surfactant varies with EO content, true or false?

(vii) Which carboxylate soaps are preferred for silk degumming?

(viii) N.P. - 9.5 has more water solubility than N.P. - 20 - True/False. Correct if false.

(ix) What is LABS?

(x) Give two applications of cationic surfactants.

(b) Describe the method of preparation, properties and application of TRO. **10**

5 Describe chemistry, preparation, properties and applications of various classes of cationic surfactants. **15**

OR

5 Describe chemistry, preparation, properties and applications of sulphate and sulphonate based anionic surfactants. **15**

6 Write short notes on any **three** of the following : **15**

(a) Polyoxyethylene alcohols

(b) Alkyl phenol ethoxylates

(c) Polyols

(d) Silicone surfactants.
