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**SARDAR PATEL UNIVERSITY**  
**SEMESTER EXAM, M.Sc. INDUSTRIAL CHEMISTRY**  
**SEMESTER -1, PS01EICH05- TECHNOLOGY OF ESSENTIAL OIL, SURFACTANTS**  
**AND COSMETIC PRODUCTS**

**23-04-2015, Thursday, TIME: 02:30 p.m TO 05:30 p.m**

**Total Marks: 70**

Note: Attempt all questions. Draw neat and labeled diagram where ever necessary. Figures on the right show marks.

**Q.1. Answer the following MCQs.**

(08)

1. \_\_\_\_\_ is one of the important application of essential oil.  
A. Perfume B. Adhesive C. Paint D. Plastic
2. The \_\_\_\_\_ method of distillation uses superheated steam.  
A. Water distillation B. Water and Steam distillation C. Steam distillation D. Azeotropic
3. \_\_\_\_\_ is one of the principal effect associated with distillation of essential oil.  
A. Reboiling B. Cooling C. Hydrodiffusion D. Refluxing
4. In emulsion the liquid which is distributed as tiny globules is known as \_\_\_\_\_ phase.  
A. Continuous B. Discrete C. Mixed D. None of these
5. \_\_\_\_\_ type of emulsion shows high electrical conductivity.  
A. O/W B. W/O C. Both A and B D. None of these.
6. \_\_\_\_\_ represents minimum concentration require for micelle formation.  
A. HLB B. CMC C. CST D. Aggregation number
7. \_\_\_\_\_ prevents dry out of cosmetic products.  
A. Astringent B. Humectant C. Filler D. Surfactant
8. \_\_\_\_\_ is not cosmetic.  
A. Face Powder B. Cream C. Hair drier D. Lipstick

Q. 2 Answer the following short questions. (Any 7)

(14)

1. What is Emulsification?
2. Enlist various chemical components of essential oil.
3. What is dispersion?
4. What is the role of HLB in surfactant?
5. Describe the structure of surfactant.
6. Enlist the functions of essential oil in plants.
7. Define the term cosmetics.
8. Give applications of cationic surfactants.
9. What are emollients?

Q.3 (a) Compare different distillation methods for essential oil production. (06)

Q.3 (b1) Which are the different methods for production of essential oils? (03)

Q.3 (b2) Define the terms: Chasis, fat corps, Defluerage (03)

OR

Q.3 (b1) Write a short note on Maceration. (03)

Q.3 (b2) Discuss the criteria for solvent selection for extraction with volatile solvents. (03)

Q.4 (a) Discuss the behavior of surfactant with respect to following phenomena:

1. Adsorption
  2. Micell
- (06)

Q.4 (b) Explain the technology of alkoxylation reactions. (06)

OR

Q.4 (b) Explain the terms: i. Foaming ii. Wetting iii. Aggregation number (06)

Q.5 (a) Discuss the classification of surfactants giving examples of each class. (06)

Q.5(b) Discuss the production technology of Alkyl benzene sulphonates (06)

OR

Q.5 (b) Write a note on non-ionic surfactants. (06)

Q.6 (a) Discuss the concept of cosmetics and give their classification on the basis of their end use on human body. (06)

Q.6 (b) Discuss the role of surfactants in cosmetics. (06)

OR

Q.6(b) Explain in brief the structure of skin. (06)

Best Of Luck