

**CVM UNIVERSITY****M.Sc. (Industrial Chemistry) Semester-I Examination-2021****Monday, 01<sup>st</sup> March – 2021****101310107: Technology Of Oleochemicals and Surfactants****10:00 AM to 12:00 Noon****Total Marks: 60**

- Note:** (1) Attempt all questions.  
(2) Figures to the right indicate Full marks.

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**Q. 1 (a) Answer the following multiple choice questions. (08)**

- (1) \_\_\_\_\_ Analytical technique is used to determine fatty acid composition of oil.  
A. GC                      B. HPLC                      C. TLC                      D. GPC
- (2) \_\_\_\_\_ value indicates the carbon chain length of fatty acid radical present in oil  
A. Acid Value                      B. Iodine Value  
C. Hydroxyl value                      D. Saponification Value
- (3) Long Chain and Short chain fatty acids can be separated by difference in \_\_\_\_\_  
A. Boiling point                      B. Melting point  
C. Cloud point                      D. Flash point
- (4) Fatty alcohol can be formed by \_\_\_\_\_ of fatty acids  
A. Hydrogenolysis                      B. Hydrocyclization  
C. Hydration                      D. Hydrolysis
- (5) \_\_\_\_\_ parameter represents the cold properties of lubricants  
A. Cloud point                      B. Pour Point  
C. Cold filter plug point                      D. All of these
- (6) Most appropriate Cetane number is in the range of \_\_\_\_\_  
A. 10-20    B.30-40    C. 40-50    D. 90-100
- (7) The Dispersion is comprised of \_\_\_\_\_ system  
A. Air-Liquid    B. Air-Solid    C. Solid-liquid    D. Liquid-liquid
- (8) \_\_\_\_\_ is the most widely used Surfactant  
A. Anionic    B. Cationic    C. Nonionic    D. Amphoteric

**Q.1 (b) Answer the following (Fill in the blanks and True or False) (08)**

- (1) \_\_\_\_\_ is the most common unsaturated fatty acid
- (2) \_\_\_\_\_ is the vitamin E component present in oil
- (3) Diesel fuel is used in \_\_\_\_\_ type of engine
- (4) \_\_\_\_\_ used as a catalyst in alkylation of Benzene to produce linear alkyl benzene
- (5) Ricinoleic acid contains hydroxyl group in its structure. **True/False**
- (6) Unsaturated Fatty acids have higher melting point . **True/False**
- (7) Oil in Water type of emulsion will conduct electric current. **True/False**
- (8) AOS is a cationic surfactant. **True/False**

**Q.2 Attempt any six of the following Short Questions. (12)**

- (1) Define Degree of Split
- (2) Classify the oils based on Iodine Value
- (3) What is hexabromide value?
- (4) Differentiate between DI and IDI engines
- (5) What is adjuvant?
- (6) Differentiate between O/W and W/O type emulsions
- (7) What is Noack Test?
- (8) What is Monolayer Formation (MLF)?

**Q. 3** Discuss various Non-triglyceride components of oil. Define the term refining (08) and write a note on various refining methods to remove unwanted components from oil

**OR**

**Q.3** Explain various important methods of analysis of oil (08)

**Q. 4** What is Fat Splitting? Write a comparative note on various methods of fat (08) splitting.

**OR**

**Q. 4** Present an account of fatty acid distillation and fractionation (08)

**Q. 5** Discuss the following properties of Bio-Lubricants: (08)  
i. Physico-chemical Properties ii. Chemical Properties

**OR**

**Q. 5** Write a brief note on following with respect to Bio-Fuels: (08)

- i. Types of diesel fuels and Cetane number
- ii. Dilution and Pyrolysis methods of Bio-fuel production

**Q. 6** What is Surfactant? Give their Classification. Discuss the following (08) behavior of surfactants:

- i. Foaming ii. Wetting iii. Solubilization

**OR**

**Q. 6** Discuss the production technology of AOS (08)

**Best Of Luck**