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SARDAR PATEL UNIVERSITY

M. Sc. Semester - III Examination

Saturday, 29th October 2016

INDUSTRIAL CHEMISTRY

Subject: Processing of oils and fats to utility products

Date: 29/10/2016

Course No. : PS03EICH05

Time: 02:00 p.m. to 05:00 p.m.

Marks: 70

Q. 1 Answer the following MCQ s (Attempt all) [08]

- I. Heavy water is prepared on a large scale by burning _____ separated from hydrogen obtained by electrolysis.
(a) water (b) Deuterium
(c) HCl (d) HNO₃
- II. _____ is the process of converting oil into a fat.
(a) Hydrogenation (b) Esterification
(c) Halogenation (d) Hydroformylation
- III. _____ % solid shall present in margarine at 4^oC
(a) 5-10 (b) 10-20
(c) 20-30 (d) 30-40
- IV. Ghee contains _____ % of milk fat
(a) 35 (b) 75
(c) 99 (d) 85
- V. Characteristic of water which prevents the lathering of water is called as _____.
(a) Hardness (b) Softness
(c) Conductivity (d) Alkalinity
- VI. _____ oil can be used without pre-treatment for making soap.
(a) Palm Kernel (b) Linseed
(c) Castor (d) Rice bran
- VII. _____ acts as a synergist in detergency.
(a) Sodium silicate (b) Calcite
(c) Sodium chloride (d) Soda ash
- VIII. _____ acts as an anti-soil redeposition agent.
(a) Sodium sulfate (b) Sodium silicate
(c) Carboxy methyl cellulose (d) Dicalcium phosphate

Q.2 Answer the following short question (Any seven) [14]

- I. Enlist the advantages of the wet process used for the hydrogenation of oils.
- II. Write the reactions for production of hydrogen using steam hydrocarbon process.
- III. Enlist the basic steps involved for the production of margarine.
- IV. Write note on vanaspati.
- V. Define the terms saponification value and iodine value.
- VI. Enlist the various indigenous oils.

- VII. Enlist the different techniques for upgrading oils?
VIII. Enlist the various factors affecting for selection of optical brighteners?
IX. Explain the function of Hydrotopes.

- Q.3 (a) With the help of labelled diagram explain electrolysis of water. [06]
(b) With the help of diagram explain lane process. [06]
Or
(b) Explain in details about optimum conditions for hydrogenation of oils. [06]
- Q.4 (a) Write explanatory note on manufacture of peanut butter [06]
(b) Write note on baking fats, doughs and shortenings. [06]
Or
(b) Write note on butter. [06]
- Q.5 (a) Write note on various sources of water. [06]
(b) With the help of diagram explain manufacture of glycerine. [06]
Or
(b) Write note on rice bran oil and coconut oil. [06]
- Q.6 (a) Write note on NSD bars. [06]
(b) Write note on phosphates. [06]
Or
(b) Write note on optical brighteners. [06]

Best of Luck.....

