

**Open Elective Syllabus for II semester
CHEMISTRY IN DAILY LIFE**

(OET)

Code: CHT.OET:201

Univ Code:201

Contact Hours: 56

Work load: 4Hours/week

Credit points:04

Evaluation: continous internal assessment – 30 marks

Semester examination –70 marks

56 Hours

UNIT-I

Dairy Products: Composition of milk and milk products. Analysis of fat content, minerals in milk and butter. Estimation of added water in milk. Beverages: Analysis of caffeine in coffee and tea, detection of chicory in coffee, chloral hydrate in toddy, estimation of methyl alcohol in alcoholic beverages.

Food additives, adulterants and contaminants- Food preservatives like benzoates, propionates, sorbates, disulphites. Artificial sweeteners: Aspartame, saccharin, dulcin, sucralose and sodium cyclamate. Flavours: Vanillin, alkyl esters (fruit flavours) and monosodium glutamate.

Artificial food colorants: Coal tar dyes and non-permitted colours and metallic salts. Analysis of pesticide residues in food. 14 h

UNIT II

Air Pollution: Air pollutants, prevention and control, Green house gases and acid rain. Ozone hole and CFC's. Photochemical smog and PAN. Catalytic converters for mobile sources. Bhopal gas tragedy.

Hydrologic cycle, sources, criteria and standards of water quality-safe drinking water. Public health significance and measurement of water quality parameters- (Colour, turbidity, total solids, acidity, alkalinity, hardness, sulphate, fluoride, phosphate, nitrite, nitrate, BOD and COD). Water purification for drinking and industrial purposes.

Toxic chemicals in the environment. Detergents- pollution aspects, eutrophication. Pesticides and insecticides-pollution aspects. Heavy metal pollution. Solid pollutants- treatment and disposal. Treatment of industrial liquid wastes. Sewage and industrial effluent treatment. 14h

UNIT-III

Vitamins: Classification and Nomenclature. Sources, deficiency diseases and structures of Vitamin A1, Vitamin B1, Vitamin C, Vitamin D, Vitamin E & Vitamin K1.

Oils and fats: Composition of edible oils, detection of purity, rancidity of fats and oil. Tests for adulterants like argemone oil and mineral oils.

UNIT IV

Corrosion: Types and prevention, corrosion failure and analysis Chemical energy system and limitations, principles and applications of primary & secondary batteries and fuel cell. Basics of solar energy, future energy storers.

Polymers : Types and classification of polymers. Source and general characteristics of natural and synthetic polymers. Typical examples of polymers used as plastics, in textiles, in electronic and automobile components, in the medical and aerospace materials. Problems of plastic waste management. Strategies for the development of environment friendly polymers. 14h

References

1. B. K. Sharma: introduction to Industrial Chemistry, Goel Publishing, Meerut (1998)
 2. Medicinal Chemistry by Ashtoush Kar.
 3. Drugs and Pharmaceutical Sciences Series, Marcel Dekker, Vol. II, INC, New York
 4. Analysis of Foods – H.E. Cox: 13. Chemical Analysis of Foods – H.E.Cox and Pearson.
 5. Foods: Facts and Principles. N. Shakuntala Many and S. Swamy, 4th ed. New Age International (1998)
 6. Physical Chemistry – P I Atkins and J. de Paula – 7 th Ed. 2002, Oxford University Press.
 7. Handbook on Fertilizer Technology by Swaminathan and Goswamy, 6th ed. 2001, FAI.
 8. Organic Chemistry by I. L. Finar, Vol. 1 & 2. 9. Polymer Science and Technology, J. R. Fried (Prentice Hall).
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