

INTERDISCIPLINARY COURSE

Paper Code: PHSCIDC201

Paper Description: CHEMISTRY IN DAILY LIFE

Paper Type: T (Credits: 03)

Total Marks: 60 [Theory (ESE – 40); Tutorial (ESE – 20)]

Theory: 45 Lectures [Each Lecture is 1 hour in duration]

CHEMISTRY IN DAILY LIFE

UNIT I: Development of Chemistry

Historical perspective of Chemistry: Alchemy, Contribution of eminent scientists in the development of Chemistry, Importance of Chemistry in daily life. **(3 Lectures)**

UNIT II: Chemistry in Agriculture

Properties, applications and examples of Agrochemicals: Fertilizers, Natural and Artificial fertilizers, Pesticides, Insecticides and Fungicides. A brief idea about advanced techniques used in agriculture. **(4 Lectures)**

UNIT III: Chemistry in the Food Industry

Food processing. The brief idea with examples of Food colour, Food preservatives, Artificial food flavour, and Artificial sweeteners. Common Identification methods of Adulterated food. Basic knowledge about Salt, Sugar, and various Spices and their needs in our body.

Constituent elements, examples and uses of some organic compounds used as food: Carbohydrates, Fats and Proteins. **(8 Lectures)**

UNIT IV: Chemistry in Pharmaceutical Industry

Properties and functions of Medicinal drugs: Antipyretics, Antibiotics, Antacids, Antifungal agents, Antiseptics, Antimalarial agents and Antidiabetic agents. Chemicals used in First Aid and basic idea about surgical materials and sanitizers. Vaccines: names of common vaccines with functions, importance of immunization in children. **(8 Lectures)**

UNIT V: Chemistry in the Soap Industry

Raw materials, applications and examples of Bathing soaps, Laundry soaps, Medicinal soaps, Liquid soaps, Detergents, Floor cleaners, Dishwashers, Lavatory soaps and cleaners. The primary difference between soaps and detergents. **(5 Lectures)**

UNIT VI: Chemistry in Transport & Textile Industry

Coal, Petrol, Diesel, LPG, CNG.

Processing of Natural and Synthetic fibers for clothing, (Examples and properties); waterproof materials, heat and cold resistant clothes. **(5 Lectures)**

UNIT VII: Chemistry in the Cosmetic Industry

Composition, applications and examples of Talcum powder, Skincare and Baby care products, Creams and Lotions, Deodorants and Perfumes, Sunscreen, Nail polishes, Nail enamel. **(6 Lectures)**

UNIT VIII: Narcotic Drugs

Influence of Addictive Drugs in Society. A brief idea about harmful drugs like Cocaine, Brown sugar, Heroin, Angel dust. **(6 Lectures)**

Reference Books:

- Stocchi, E. *Industrial Chemistry*, Vol. I, Ellis Horwood Ltd., UK, 1990.
 - Kent, J.A. *Riegel's Handbook of Industrial Chemistry*, 9th Ed., CBS Publisher, New Delhi, 1997.
 - Manahan, S.E. *Environmental Chemistry*, 7th Ed., CRC Press, 2010.
 - Timberlake, K. & Timberlake, W. *Basic Chemistry*, 5th Ed., Pearson, 2019.
 - Myers, R. *The Basics of Chemistry*, Atlantic Publishers, 2003.
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