

Semester-II
PAPER Title: Minor Paper-2A (MN-2A)
Credits - 03

Learning objective:

- To understand the importance of science in everyday life.
- To understand the preparation of soaps and detergents.
- To know about kinds of Biofuel and its uses.
- To know about uses Fibers in day-to-day life.

Chemistry in Everyday Life

Unit	FM-60 Marks	Content	Time 3hrs	Hours
1		Respiration and energy production in human body: Brief outline of haemoglobin and myoglobin, oxygen transport mechanism in body, cooperativity. Energy production in body, ATP; enzyme responsible for food digestion, mechanism of food digestion, active site of cytochrome c-oxidase.		10h
2		Vitamins and minerals: Need for vitamin in body, types of vitamins, water soluble and fat-soluble vitamins, Vitamin B-12, vitamin C (Cyanocobalamine), D, Vitamin K. Role of minerals in body, iodine deficiency and remedy.		10h
3		Significance of Radical chemistry in living system: Radical production in environment, superoxide and peroxide, health impact, action of radicals, cell mutation, diseases caused by free radical, cancer, radical quencher, anti-oxidants, natural anti-oxidants like vegetables, beverages like tea and coffee, fruits. Radical destroying enzymes: superoxide dismutase, catalase, peroxidase, mechanism of action.		10h
4		Chemistry of Materials: Soaps and Detergents – their action, Biofuels – production of biofuels and its utility as alternative fuel source, Fibers: natural fibres, cotton, wool, silk, rayon, artificial fibres, polyamides, acrylic acid, PVC, PVA; Examples of natural biodegradable polymers, cellulose, cellulose acetate, cellophane, soy protein, corn, zein protein, wheat gluten protein, synthetic biodegradable polymers. Use of polymeric materials in daily life.		15h

Sessional Internal Assessment (SIA) Full Marks – 15 Marks

A – Internal written Examination – 10 Marks (1 Hr)

B – Over All Performance including Regularity – 05 Marks

Books Recommended:

1. Kaim W, Bioinorganic Chemistry, Vol 4, Brigitte Scwederski, Wiley, 1994.
2. Crichton R. H. Biological Inorganic Chemistry – An Introduction, Elsevier, 2008.
3. Berg J. M., Tymoczko J. L., Stryer I. Biochemistry, W. H. Freeman, 2008.
4. Bertini, I., Gray, H. B., Lippard, S. J. and Valentine, J. S. (1994) Bioinorganic Chemistry. University Science Books (1994)
5. Lippard S., Berg J. M. Principles of Bioinorganic Chemistry; University Science Books 1994.
6. Polymer science, V. R. Gowariker, N. V. Viswanathan, J. Sreedhar, New Age International.

Semester-II
PAPER Title: Chemistry Practical - MN-2A LAB
Credits - 01

FM-25 Marks

Pass Marks - 10

Content

- Analysis of soaps and detergents.
- Analysis of Biofuels - flash point, pour point, cloud point.
- Preparation of Nylon6/6,6
- Testing of adulterant in food, oil and vegetable
- Vitamin-C preparation.

Experiments – 15 Marks

Viva-Voice – 05 Marks

Notebook – 05 Marks