SCR GCW SAMPLA

LESSON PLAN FOR 3rd SEMESTER ORGANIC CHEMISTRY

SESSION 2024-25

22-27 JULY 2024	UNIT 1 .Alcohols Monohydric alcohols nomenclature, methods of formation by reduction of aldehydes, ketones, carboxylic acids and esters.
29 JULY -03 AUG	Hydrogen bonding. Acidic nature. Reactions of alcoholsDihydric alcohols — nomenclature, methods of formation, chemical reactions of vicinal glycols.
05-10 AUG	UNIT 2. Epoxides Synthesis of epoxides. Acid and base-catalyzed ring opening of epoxides, orientation of epoxide ring opening, reactions of Grignard and organolithium reagents with epoxides
12-17 AUG	oxidative cleavage [$Pb(OAc)_4$ and HIO_4] and pinacol-pinacolone rearrangement
19-24 AUG	Ultraviole t (UV) absorption spectroscopy Absorption laws (Beer-Lambert law), molar absorptivity, presentation and analysis of
26-31 AUG	Applications o f UV Spectroscopy in structure elucidation of simple organic compoundsCarboxylic Acids & Acid Derivatives
2-7 SEP	Nomenclatu re of Carboxylic acids, structure and bonding, physical properties, acidity of carboxylic acids, effects of substituents on acid strength.
9-14 SEP	Sessional Exam - 1
16-21 SEP	Preparation of carboxylic acids. Reactions of carboxylic acids. Hell-Volhard-Zelinsky reaction. Reduction of carboxylic acids.Mechanism of decarboxylation.
23-28 SEP	Structure , nomenclature and preparation of acid chlorides, esters, amides and acid anhydrides.
30-05 OCT	Relative s tability of acyl derivatives. Phys ical properties, interconvers ion of acid derivatives by nucleophilic acyl substitution.
07-12 OCT	Mechanisms of es ter ifica tion and hydrolysis (acidic and basic)
14-19 OCT	REVISION
21-26 OCT	REVISION
27-03 HOLIDAY	SEMESTER BREAK
04-09 NOV	TEST
11-16 NOV	Sessional Exam - 2
18-22 NOV	TEST

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LESSON PLAN FOR 3rd SEMESTER INORGANIC CHEMISTRY

SESSION 2024-25

22-27 JULY 2024	Organometallic Chemistry Definition, nomenclature and classification of organometallic compounds. Preparation, properties,
29 JULY -03 AUG	Bonding of alkyls of Li, Al, Hg, and Sn a brief account of metal-ethylenic complexes, mononuclear carbonyls and the nature of bonding in metal carbonyls.
05-10 AUG	Acids and Bases, HSAB Concept Arrhenius, Bronsted – Lowry, the Lux – Flood, Solvent system and Lewis concepts of acids & bases,
12-17 AUG	relative strength of acids & bases, Concept of Hard and Soft Acids & Bases.
19-24 AUG	Symbiosis, electronegativity and hardness and softness
26-31 AUG	Bioinorganic Chemistry Essential and trace elements in biological processes,
2-7 SEP	metalloporphyrins with special reference to haemoglobin and myoglobin
9-14 SEP	Sessional Exam - 1
16-21 SEP	Biological role of alkali and alkaline earth metal ions with special reference to Ca^{2+}.
23-28 SEP	Nitrogen fixation.
30-05 OCT	Sil icones and Phosphazenes Silicones and phosphazenes,
07-12 OCT	preparation, properties,structure and uses
14-19 OCT	REVISION
21-26 OCT	REVISION
27-03 HOLIDAY	SEMESTER BREAK
04-09 NOV	TEST
11-16 NOV	Sessional Exam - 2
18-22 NOV	TEST

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LESSON PLAN FOR 1ST SEMESTER SKILL ENHANCEMENT COURSE

SESSION 2024-25

22-27 JULY 2024	Analysis of Soil and Water Composition of soil, concept of pH and pH measurement of soil, complexometric titrations, chelation, chelating agents,
29 JULY -03 AUG	use of indicators, estimation of calcium and magnesium ions in soil. Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods, determination of dissolved oxygen of a water sample.
05-10 AUG	Chemistry in Cosmetics
12-17 AUG	A general study including preparation and uses of the following: Hair dye, soap, shampoo, suntan lotions,
19-24 AUG	face powder, lipsticks, talcum powder, nail enamel.
26-31 AUG	Pesticides General introduction to pesticides (natural and synthetic), benefits and adverse effects, changing concepts of pesticides, brief introduction of structure activity relationship,
2-7 SEP	synthesis and technical manufacture
9-14 SEP	Sessional Exam - 1
16-21 SEP	uses of representative pesticides in the following classes: organochlorines (gammexene), organophosphates (malathion).
23-28 SEP	Experimental Techniques Basic principle of pH metric, potentiometric and conductometric titrations,
30-05 OCT	applications of conductivity measurements:
07-12 OCT	determination of degree of dissociation, determination of Ka of acids and base,
14-19 OCT	buffer solution, buffer action, Henderson–Hazel equation, buffer mechanism of buffer action.
21-26 OCT	REVISION
27-03 HOLIDAY	SEMESTER BREAK
04-09 NOV	REVISION
11-16 NOV	Sessional Exam - 2
18-22 NOV	TEST