Satyaniiketan 's

Adv. M.N.Deshmukh Art's , Sci. and Commerce College Rajur,

S.Y. B.Sc.Paper II CH-302 – Inorganic and Organic Chemistry

Semester-III (CBCS 2019 Pattern) (Frist Term)

TEACHING PLAN 2022-2023

Sr.No.	MONTH	TOPIC	LECTURE
1	JUNE '22	**Aromatic Hydrocarbons** Introduction and IUPAC nomenclature, preparation (Case-Benzine) from phenol, by decarboxylation, from acetylene, from benzene sulphonic acid. Reactions (Case Benzene) Electrophilic substitution nitration, halogenation and sulphonation. Friedel-craft's reaction (alkylation, and acylation) (up to 4 carbons on benzene). Side chain oxidation of ally benzenes	04 L
2	JULY '22	**Alkyl and Aryl Halides** Alkyl Halides (up to 5 Carbons) Introduction and IUPAC nomenclature, Types of Nacleophilic Substitution (SN, SN and SNI) reactions. Preparation; from alkenes and alcohols. Reactions: hydrolysis, nitrite and nitro formation, nitrile and isonitrile formation Williamson's ether synthesis: Elimination vs. substitution	06 L
3	AUG '22	**Aryl Halides** Intro and IUPAC nomenclature, Preparation (Chloro, bromo andiodobenzene) from phenol Sandmeyer and Gattermann reactions.Reactions(Chlorobenzene): Aromatic KNH;/NH (Reactivity and Relative strength of C-Halog bond in alkyl, allyl, benzyl, vinyl and aryl halides.)	04 L
4	SEP '22	**Alcohols, Phenols and Ethers** Alcohols Introduction and IUPAC nomenclature, Preparation: Preparation of 1,2 and 3 alcohols using Grignard reagent, ester hydrolysis, reduction of aldehydes, ketones, carboxylic acid and esters. Reactions with sodium, HX (Lucas test), esterification oxidation (with PCC, alc KMnO,, acidic dichromate, conc. HNO,.) Oppeneauer oxidation Diols: (Up to 6 Carbons) oxidation of diols. Pinscol-Pinacolone rearrangement.	02 L
5	OCT '22	**Ethers (aliphatic and aromatic)** Cheavage of ethers with HI Phenols (Phenol case): Introduction and IUPAC nomenclature, Preparation: Cument hydroperoxide method, froin diazonium salts. Reactions: Electrophilic substitution: Nitration, halogenation and sulphonation Reimer-Tiemann Reaction, Gattermann-Koch Reaction, Houben-Hoesch Condensation, Schotten-Baumann Reaction	04 L
6	NOV '22	**Holiday** **(SEMESTER – VI Second Term)**	
7	DEC '22	**Aldehydes and Ketones (aliphatic and aromatic)** (Formaldehyde, acetaldehyde, acetone and benzaldehyde) Introduction and IUPAC nomenclature, Preparation from acid chlorides and from nitriles. Reactions-Reaction with HCN, ROH. NaHSO, NH-G derivatives. lodoform test Aldol Condensation. Cannizzaro's reaction. Wittig reaction. Benzoin condensation, Clemenson reduction and Wolff Kishner reduction. Meerwein-Pondorff Verley reduction	05 L
8	JAN-'23	**Carboxylic acids and their derivatives** Carboxylic acids (aliphatic and aromatic): (up to 5 carbons) Preparation Acid chlorides, Anhydrides, Esters and Amides from acids and their inter conversion. Reaction: Comparative study of nucleophilicity of acyl derivatives. Reformatsky Reaction, Perkin condensation.	05 L
9	FEB-'23	**Amines and Diazonium Salts** Amines (Aliphatic and Aromatic): Introduction and IUPAC nomenclature, Preparation from alkyl halides, Gabriel's Phthalimide synthesis, Hofmann Bromamide reaction. Reactions: Hofmann vs. Saytzeff elimination, Electrophilic substitution (Case Aniline): nitration, bromination, sulphonation.	04 L
10	MAR-'23	**Stereochemistry of Cyclohexane** Bayer's strain theory, heat of combustion of cycloalkanes, structure of cyclohexane	02 L
11	APRIL- '23	Axial and equatorial H atoms, conformations of cycloalkane, stability of conformations of cyclohexane, methyl and t-butyl monosubstituted cyclohexane, 1, 1 and 1, 2 dimethyl cyclohexane and their stability	02 L

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