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Chrotechnology: Industrial Synthesis of Optically active compounds-R. A. Sheldon, Marcel Dekker) 1993

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13. Organic synthesis: Special techniques-V. K. Ahluwalia and R. Aggarwal (Narosa) 2003

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OC P 557 : Organic Chemistry Practicals –VI

COURSE OUTCOME:

Enable the students:

- To gain the knowledge of preparation and purification of eighteen organic molecules using multistep organic synthetic protocol.
- To know the synthesis and purification of one derivative each of furan, indole, pyrazole, quinoline, thiazole, acridine, coumarin and triazoles.
- To learn the synthesis of picric acid, para red, methyl red, methyl orange, flourecein, eosin, indigo and dyeing of fabrics.

Preparation of Ethyl resorcinol from Resorcinol, 3-Bromo-4-methyl benzaldehyde from p-Toluedine, ε-Caprolactam from cyclohexanone, p-Aminobenzoic acid from p-Nitrotoluene, s-Tribromobenzene from aniline, o-hydroxyacetophenone from phenol, Benzanilide from Benzophenone, Benzylic acid from Benzoin, Benzopinacolone from Benzophenone, p-Chlorotoluene from p-Toludine, 2,5-Dihydroxyacetophenone from Hydroquinone, 2,4-Dinitrophenylhydrazine from Chlorobenzene, m-Nitrobenzoic acid from Benzoic acid, 2,4-Dinitrophenol from Chlorobenzene, o-Aminobenzoic acid from Phthalic acid, 2-Carbethoxycyclopentanone from Adipic acid, α-Acetylaminocinnamic acid from Glycine, p-Aminoazobenzene from Aniline.

Synthesis of one derivative each of Furan, Indole, Pyrazole, Quinoline, Thiazole, Acridine, Coumarin and Triazole containing heterocycles. Synthesis of Picric acid, Para red, Methyl red, Methyl orange, Flourescein, Eosin, Indigo and dyeing of fabrics.

OC P 558: ORGANIC CHEMISTRY PRACTICALS-VII

COURSE OUTCOME:

- The students will understand the separation of components from mixture of organic compounds by fractional crystallization, fractional distillation, adsorption, paper, TLC and column chromatography, purification and characterization of organic compounds.
- The students learn the determination of pKa values, molar extinction coefficients, keto-enol equilibrium, order of reactions, salt effect and effect of acidity on reaction rates.
- To know the preparation and estimation of aryloxy acetic acids, anilinoacetic acids, estimation of carbohydrates and proteins.

- To understand the elucidation of structure of organic compounds using UV, IR, NMR and mass spectra, locating the organic compounds by reference to literature, use of computers in the study of conformation and geometry of simple organic molecules, utility of chemdraw and chemsketch.

Separation of components from mixture of organic compounds by fractional crystallization, fractional distillation, adsorption, Paper, TLC and column chromatography. The purification and characterization of organic compounds.

Determination of pKa values, molar extinction coefficients, keto-enol equilibrium, order of reactions-S_N1 and S_N2 reactions, salt effect and effect of acidity on reaction rates.

Preparation and Estimation of aryloxyacetic acids, anilinoacetic acids, Carbohydrates, Proteins.

Elucidation of structure of organic compounds using UV, IR, NMR and Mass spectra.

Locating an organic compound by reference to literature (Chemical Abstract).

Applications of computers in the study of conformation and geometry of some simple organic molecules. Utility of Chem draw and Chem sketch.

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5. Laboratory Experiments in Organic Chemistry-Adam, Johnson & Wicon (McMillan), 1979.
6. Experimental Organic Chemistry- H. D. Durst & G. E. Goke (McGraw-Hill) 1980.
7. More Spectroscopic Problems in Organic Chemistry-A.J. Baker et al.(Heyden) 1975.
8. Spectral Problems in Organic Chemistry- Davis & Wells (Chapman & Hall) 1984

OC P 559: PROJECT WORK AND DISSERTATI

COURSE OUTCOME:

Enable the students:

- To design the project by collecting required background material by referring the literature
- To understand the functioning and safety features in the industry.
- To improve the experimental and soft skills.
- To learn various analytical and instrumental techniques and interpretation of analytical data.