OC P 417: ORGANIC CHEMISTRY PRACTICALS–I

(**Any twelve preparations are to be carried out)**

Course Outcome

- Student will learn the setting up of reaction and handling of glassware and reagents
- Enlighten the students to understand the method of organic preparation by utilizing various kinds of organic reactions.
- Explain the principle and mechanistic aspects of various basic organic reactions.
- Learn the isolation and purification of products.
- Acquire the experimental skills for the preparation of organic compounds.

Preparation of the following compounds through single step and isolation, recrystallization and determination of melting point & yield.

1. Preparations of *p*-bromoacetanilide from acetanilide, 2,4,6-tribromophenol from phenol, phenacyl bromide from acetophenone,1-bromo-2-naphthol from 2-naphthol and α,β-dibromocinnamic acid from cinnamic acid through bromination reactions.
2. Preparations of *p*-niroacetanilide from acetanilide, methyl *m*-nitrobenzoate from methyl benzoate, 2,4-dinitrochlorobenzene from chlorobenzene and 2,4-dinitroanisole from anisole through nitration reactions.
3. Preparations of *p*-nitroaniline from *p*-nitroacetanilide and *p*-bromoaniline from *p*-bromoacetanilide through hydrolysis reactions.
4. Preparations of nerolin (β-naphthyl methyl ether from β-naphthol and N-methylanthranilic acid from anthranilic acid through methylation reactions.
5. Preparations of α-and β-D-glucose penta-acetates from glucose, β-naphthyl acetate from β-naphthol and resacetophenone from resorcinol through acetylation.
6. Preparations of phenoxyacetic acid from phenol, *o*-cresyloxyacetic aid, 2,4-dichlorophenoxyacetic acid from 2,4-dichlorophenol and *p*-aminobenzoic acid from *p*-chlorobenzoic acid through nucleophilic substitution reactions.
7. Preparation of S-Benzylisothiuronium chloride from benzyl chloride through nucleophilic substitution reaction.
8. Preparation of cyclohexene from cyclohexanol and succinic anhydride from succinic acid through dehydration reactions.
9. Preparations of adipic acid from cyclohexanol and *p*-nitro benzoic acid from *p*-nitrotoluene through oxidation reactions.
10. Preparations of *p*-benzoquinone from hydroquinone and anthraquinone from anthracene by oxidation reaction.
11. Preparations of Benzhydrol from Benzophenone, azobenzene from nitrobenzene and *m*-nitroaniline from *m*-dinitrobenzene through reduction reactions.

12. Preparation of 4-Formyl-N,N-dimethyl aniline from N,N-Dimethylaniline through Vilsmeier-Haack formylation reaction.
13. Preparation of *o*-hydroxybenzophenone from phenyl benzoate via Fries rearrangement.
14. Preparation of *p*-chlorobenzoic acid from *p*-toluidine through diazotisation and Sandmeyer reaction.
15. Preparations of benzoic acid and benzyl alcohol from benzaldehyde and 4-chlorobenzoic acid and 4-chloro benzyl alcohol from 4-chlorobenzaldehyde by Cannizzaro reactions.
16. Preparations of benzalacetone and dibenzalacetone from benzaldehyde and acetone through Claisen-Schmidt condensation.
17. Preparation of cinnamic acid from benzaldehyde through Perkin condensation reaction.
18. Preparation of *o*-benzoyl benzoic acid from phthalicanhydride and benzene through Friedel-Craft's acylation.
19. Preparation of triphenylmethanol from benzoic acid through Grignard reaction.
20. Preparation of diazoamino benzene from aniline through diazotisation and coupling reactions.
21. Preparations of *p*-iodonitrobenzene and *o*-iodobenzoic acid via diazotisation and nucleophilic substitution.
22. Preparation of osazone derivatives of monosaccharides through condensation reaction.
23. Preparation of hippruic acid from glycine through condensation reaction.

References

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