CHE244(T+P) – Applied Organic and Analytical chemistry

Credit – (2T+2P), Theory Hours – 30, Practical Hours – 60

Course Outcomes:

After the completion of this course, student will be able to-

CO1: Know about Carbohydrates and Heterocycles with their synthesis & chemical properties and their importance in medicinal chemistry

CO2: Gain deeper knowledge about acid base titrrymentry analysis

CO3: Apply the knowledge of principles in analysis of biomolecules, drugs, dyes, intermediate etc.

CO	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	2	2	2	2	
CO2	2	2	2		1	1
CO3	2	2	2		1	

Unit I:

Carbohydrates: Monosaccarides and Disaccarides

[A] Mono saccharides **[12 Marks]**
[7 Hours]

Introduction, classification of carbohydrates, osazone formation, epimerization, step up and step down reactions of monosaccharides, simple structures of glucose and fructose, Fischer's proof of configuration of D-glucose

[B] Disaccharides **[13 Marks]**
[8 Hours]

Disaccharides, structure of (+) maltose, (+) cellobiose and (+) sucrose

Unit 2- Acid-base titration **[25 marks]**
[15 hours]

Theory of acid-base titration, acid-base titration and ways of locating end point, titration of strong acid with strong base, titration of weak acid with strong base, titration of weak base with strong acid, titration of polyprotic acid, analysis of washing soda.

REFERENCE BOOKS

1. 'Organic Chemistry' by James B Hendrickson, Donald J. Cram and George S.Hammond, Mc-Graw-Hill, Third Edition.
2. 'Advance Organic Chemistry' by Arun Bahl, B. S. Bahl, S.Chand and Co. Ltd. New Delhi, Fifth Edition, 2012.
3 'Analytical Chemistry' by Dhruba Charan Dash, PHI Learning Pvt. Ltd., New Delhi, 2011.

4. ‘Quantitative Analysis’ by R. A. Day, A. L. Underwood, Prentice-Hall of India Pvt. Ltd., New Delhi, Sixth Edition, 2004.
5. ‘Analytical Chemistry’ by Gary D. Christian, John Wiely & Sons, INC, New York, Fifth Edition, 1994.
6. ‘Analytical Chemistry an Introduction’ by Douglas A. Skoog, Donald M. West, F. James Holler, Saunders College Publishing, Harcourt Brace College Publishers, Philadelphia, Sixth Edition, 1994.
7. ‘A Textbook of Analytical Chemistry’ by Y. Anjaneyulu, K. Chandrasekhar, Valli Manickam, Pharma Book Syndicate, Hyderabad, India, 2006.

CHE244(P) – Chemistry Practical

CHEMISTRY LAB – I

Credit – 2, Hours – 60, Marks - 50

ORGANIC CHEMISTRY PRACTICAL

Organic spotting, Derivative preparation, study the concept of purification: crystallization/distillation
(Minimum Fifteen (15) compounds: (9 solids and 6 liquids))
Acids: Salicylic acid, Cinnamic acid, Anthranilic acid, Sulfanilic acid, Phthalic acid
Phenols: p-Nitrophenol, 1-Naphthol, 2- Naphthol, Resorcinol.
Bases: m-Nitroanilines, p-Nitroanilines, p-Toluidine, aniline
Neutral: Solids: Acetanilide, Glucose, Thio-urea, Benzamide
Liquids: Chloroform, Methyl acetate, Chlorobenzene, Benzaldehyde, Acetophenone, Bromobenzene, Toluene

REFERENCE BOOKS

1. ‘Elementary Practical Organic Chemistry Part-II, Qualitative Organic Analysis’, by A.I Vogel, CBS Publishers & Distributers, New Delhi, Second Edition, 2004.
2. ‘Elementary Practical Organic Chemistry Part III Quantitative Organic Analysis’, Part III Quantitative Organic Analysis”, by A.I Vogel, CBS Publishers & Distributers, New Delhi, Second Edition, 2004.
3. ‘Comprehensive Practical Organic Chemistry – Qualitative Analysis’, by V.K. Ahluwalia, Sunita Dhingra, First India Edition, 2010, University Press (India) Private Limited, Hyderabad,
4. ‘Organic Analytical Chemistry theory and Practice’ by Mohan Jag, Narosa Publication, New Delhi, 2003.
5. ‘Advanced Practical Organic Chemistry’ by J Leonard, B Lygo, G Procter, Stanley Thornes Publishers Ltd., First Indian Edition, 2004.