

## CH 253 ENGINEERING CHEMISTRY – III

CREDITS= 6 (L = 4, T=0, P = 2)

1	<b>Hydrocarbons:</b> Preparation, properties and uses of aromatic, aliphatic and alicyclic compounds	7 Hours
2	<b>Alcohols and phenols:</b> Preparation, properties and uses of low and high molecular weight alcohols and phenols like ethanol, lauryl alcohol, phenol, resorcinol, cresols, catechol and pyrogallol	6 Hours
3	<b>Acids and esters:</b> Preparation, properties and uses of mono and dibasic acids, acetoacetic acid, malonic acid and their esters.	6 Hours
4	<b>Amines:</b> Mono-, di- and triethyl amines and their salts, aniline and diazo reactions.	4 Hours
5	<b>Heterocyclic compounds:</b> Preparation, properties and uses of pyrrole, thiophene, furan, pyridine and quinoline.	5 Hours
6	<b>Natural products:</b> Simple terpenes like alpha pinene and geraniol, carbohydrates like glucose, fructose, sucrose, dextrans and starch.	4 Hours
7	<b>Dyes:</b> Classifications, manufacture of dyes and their intermediates.	4 Hours
8	<b>Toxicity:</b> Relative toxicity of chemicals, acute toxicity test, significance of LC50, LD50 and EC50, Action of toxic substances on biosystems, methods of ingress, safety precautions and antidotes.	4 Hours

### REFERENCE BOOKS:

Title: Organic chemistry  
Author: Morrison and Boyd  
Publisher: Printice Hall of India

Title: Organic chemistry (volume 1 and 2)  
Author: I. L. Finar  
Publisher: ELBS

Title: Organic chemistry  
Author: G. Marc Loudon  
Publisher: Oxford University Press

Title: Organic chemistry  
Author: Graham Solomons and Craig Fryhle  
Publisher: John Wiley and sons

Title: Industrial chemistry including chemical engineering  
Author: B. K. Sharma  
Publisher: Goel publishing house, Meerat.

Title: A text book of organic chemistry  
Author: B. S. Bahl and Arun Bahl  
Publisher: S. Chand and company

**List of experiments:**

- 1 Element detection and identification of functional group in organic compounds like
  - (i) carboxylic acids
  - (ii) phenols and alcohols
  - (iii) aldehydes and ketones
  - (iv) esters
  - (v) amines and amides
  - (vi) nitro compounds
  - (vii) Carbohydrates and hydrocarbons.
- 2 To analyze the mixture containing organic compounds
- 3 To determine the partition coefficient of benzoic acid distributed between water and kerosene.
- 4 To determine the molecular weight of the given polymer sample by viscometric method.
- 5 Preparation of a polymer resin