<u>CY-109 Applied Chemistry</u>

Gases: Gas Laws.Kinetic gas equation. Vandar Waal's Equation, Critical phenomenon. Liquidification of gases, specified heat (molar heat capacity), properties of Solution Surface Tension, Viscosity, Osmosis and Osmotic Pressure.

PH-Buffer Solution & Liquids: Spectrophotometer, Basic concepts of Colloidal Chemistry. Classification purification (dialysis).

Thermo-chemistry: Chemical thermodynamics, Hess's Law. Heat of reaction, Bomb Calorimeter, Relation between H and U measurement of heat reaction.

Electrochemistry: Laws of Electrolysis. E.M.F. series. Corrosion (Theories, inhibition & protection)

Water & Sewage: Sources of water, impurities, hardness, water softening, purification of water for potable and industrial purposes, electro-dialysis and introduction to environmental pollution. Main sources and effects. Sewage treatment.

Fuels: Types of fuels. classification of fossil fuels.

Metals & Alloys: Properties and general composition of metals and alloys such as Iron. Copper. Aluminum. Chromium. Zinc used in engineering field Engineering Materials.

Inorganic Engineering Materials: Cement. Class Organic engineering materials: Polymers. Rubbers. Plastics and Paints, Semiconductors and Dielectric.

Recommended book(s)

Text Books:

- 1. Text Book of Engineering Chemistry by R. Goplan , D. Venkappaya & S. Nagarajan., 4th edition, Vikas Publishing House, 2018
- General Chemisty Principles and Modern Applicationb by Ralph H. Petrucci, William S. Harwood, F. Geoffery Herring, Jeffry D. Madura, 10th edition, Cataloguing in Publication, 2011

Reference Books:

1. The Molecular nature of Matter and Change by S. Maartin Silberberg 8th edition, McGraw-Hill Education, 2017