

## 1.3 10003 APPLIED CHEMISTRY

### UNIT-1 WATER

- Sources of Water
- Common Impurities or nature of impurities of water.
- Types
- Hardness of Water
- Types of Hardness
- Degree of Hardness
- Unit of Hardness
- Determination of Hardness of Water
- Advantage of E.D.T.H.
- Ion Exchange Process
- Cation Exchange Resins ( $R^- H^+$ )
- Anion Exchange Resins ( $R^- H^+$ )
- Alkalinity of Water
- Determination of Alkalinity

### UNIT-2 METALS AND ALLOYS

- Metals and Non Metals
- Distinction between metals and Non metals
- Occurrence of Metals in Nature
- Introduction of Metallurgy
- Important terms used in Extraction of Metals
- Gangue or Matrix
- Flux
- Slag
- Types of Metallurgical Processes
- Preliminary Methods for the extraction of Metals
- Crushing and Grinding
- Concentration or Beneficiation or Ore-Dressing
- Extraction of Metals
- Conversion of the Concentrated Ore to its Oxide Form
- Conversion of the Oxide of the Metal to the Metallic form
- Refining or Purification
- Alloys
- Introduction to Alloys
- Preparation of Alloys
- Purposes of Alloying (alloy making)
- Classification of Alloys

### UNIT-3 CORROSION

- Introduction
- Cause of Corrosion
- Consequences of Corrosion
- Factors Influencing Corrosion
- Nature of Metal
- Environment Based Factor

#### **UNIT-4 FUELS AND COMBUSTION**

- Mechanism of Heat Production
- Classification of Fuels
- Calorific Value
- Units of Heat
- Characteristics of Good Fuel
- Coal
- Origin of Coal
- Analysis of Coal
- Significance of Proximate Analysis
- Ultimate Analysis
- LUBRICANTS
- Lubricants
- Friction
- Sliding Friction
- Rolling Friction
- Lubricants and Lubrication
- Functions of Lubricant
- Lubricating Oils
- Properties of Lubricants
- Cloud point and Pour Point
- Volatility
- Acid Value
- Coke Number

#### **UNIT-5 PAINTS, VARNISHES AND ENAMELS**

- Introduction
- Paint
- Constituents of Paints and their functions
- Varnishes
- Raw Materials or constituents of good varnish
- Classification and types of varnishes
- Enamels

#### **UNIT-6 ENVIRONMENTAL POLLUTION AND ITS CONTROL**

- Pollutants
- Type of Pollutants
- Type of Pollutions
- Air Pollution
- Water Pollution
- Noise Pollution
- Soil Pollution
- Acid Rain
- Ozone Layer Depletion
- Photochemical Smog
- Global Warming
- Green House Effect
- Radioactive Pollution
- Control of Air Pollution

- Control of all types of Pollution.

**Reference Book:** Applied chemistry I by Dr. Raman Rani Mittal

