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विषय- रसायन विज्ञान (स्नातक स्तर)

Unit- A

- Atomic Structure.
- Periodic Properties.
- Chemical Bonding- Ionic bonding, covalent bonding.
- s-Block elements.
- p-Block elements.
- Chemistry of noble gases.
- Metallurgical processes.
- Chemistry of Transition elements ( first, second and third series).
- Oxidation and reduction.
- Coordination Chemistry.
- Chemistry of lanthanides and actinides.
- Acids and bases.
- Non aqueous solvents.
- Magnetic Properties of transition metal complexes.
- Electronic spectra of transition metal complexes.
- Organometallic chemistry.

Unit- B

- Structure and bonding.
- Mechanism of organic reactions.
- Stereochemistry of organic compounds.
- Alkanes and cycloalkanes.
- Alkenes, cycloalkenes, dienes and alkynes.
- Arenes and aromaticity.
- Alkyl and aryl halides.
- Alcohols.
- Phenols.
- Ethers and epoxides.
- Aldehydes and ketones.
- Carboxylic acids and their derivatives.
- Organic synthesis via enolates.
- Carbohydrates, nitrogen containing organic compounds.



- Amino acids, peptides, proteins and nucleic acids.
- Hetrocyclic compounds.
- Organo-metallic compounds in organic synthesis.
- Spectroscopy of organic compounds, introduction.
- Electromagnetic spectrum; absorption spectroscopy.
- Infra red (IR) absorption spectroscopy.
- Nuclear magnetic resonance (NMR) spectroscopy.
- Vibrational spectrum.
- Rotational spectrum.

#### Unit- C

- Gaseous states
- Liquid state
- Solid state
- Colloideal state
- Chemical equilibrium
- Ionic equeilibria
- Phase equilibrium
- Chemical kinetics and catalysis
- Thermodynamics I
- Thermodynamics II
- Thermodynamics III
- Electrochemistry I
- Electrochemistry II
- Surface chemistry
- Elementary quantum mechanics
- Photo chemistry
- Solutions and colligative properties

#### Unit- D

- Green chemistry
- Bioinorganic chemistry
- Fats, oils and detergents
- Polymers
- Synthetic dyes
- Chromatography
- Pharmaceutical compounds.