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NutanVidyalayaseVannaVi Education Society, Umri-

LATE BABASAHEB DESHMUKH GORTHEKAR MAHAYIDYALAYA, UMRI

Dist. Nanded, (Maharashtra)-431807

(Arts, Commerce & Science)

(Affiliated to Swami RamanandTeerthMarathwada University, Nanded)

(A UGC 2(F) & 12(B) Recognized)

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Ref. No. LBDGMU/2019-20/

Date:

B. Sc. First Year Chemistry

B.Sc. Chemistry First Year (Semester-I)

Paper-Ig Organic + Inorganic Chemistry, (CCC-I)

Learning Outcomes: After completion of syllabus students will be able to understand following outcomes

- 1. Student should learn basic concept of organic chemistry, Nomenclature.
- 2. Student get well acquainted with functional group in organic chemistry.
- 3. To understand the basic concepts and differences aliphatic hydrocarbons.
- 4. To know about term cycloalkane, cycloalkane and diene.
- 5. Learn and practice about organic compounds with their names.
- 6. Students learn some exceptional electronic configuration, trends and Periodicity in the following properties like atomic size, ionization energy, electron affinity & electronegativity.
- 7. To understand the inert gases forms compounds, different fluoride compounds of xenon.

(Semester-I) Paper-II (CCC-I) Physical + Inorganic Chemistry

Learning Outcomes: After completion of syllabus students will be able to understand following outcomes.

1. Learning and understanding rules of logarithm, Rules of drawing graph,

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Waharashtra)

Derivatives, Integration, different mathematical concept and SI units, and their use in solving numerical.

- 2. Learning surface phenomena at heterogeneous surfaces.
- 3. Student will learn the basic knowledge of gas phase, Kinetic molecular theory, critical phenomenon, liquefaction and molecular velocities.
- 4. To impart knowledge about solid phase, crystallography and some crystal structure.
- 5. General characteristics of s-block elements, oxides, hydroxide, carbonate & its complexes
- 6. Study the oxidation and reduction by different methods.

(Semester-II) Paper-III: Organic + Inorganic Chemistry, (CCC-II)

Learning Outcomes: After completion of syllabus students will be able to understand following outcomes.

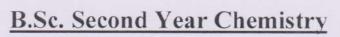
- 1. Student should learn the concept of aromatic hydrocarbons, Aromaticity and antiaromaticity.
- 2. Student should understand the phenols and synthesis of phenols
- 3. Student knows about the haloafkene and haloarenes compounds.
- 4. To know the concepts of carboxylic acids and their derivatives.
- 5. To know about the types of alcohols and reaction of epoxide.
- 6. To study the different properties of P- block elements.
- 7. To know the acids & Bases by different concepts.

(Semester-II) Paper-IV (CCC-II) Physical + Inorganic Chemistry

Learning Outcomes: After completion of syllabus students will be able to understand following outcomes.

- 1. To impart knowledge of atomic structure, different theories of atomic structure, rules of electronic configuration and quantum numbers.
- 2. Learning of properties of liquid phase as surface tension, Viscosity and parachor.
- 3. Student will learn the basic knowledge of colloidal state, types, preparation, properties and applications of colloidal state.
- 4. Learning and understanding of catalysis, types of catalysis and characteristics of catalyzed reactions.
- 5. To understanding the chemical bond and its different types of bonds.
- 6. Learning the Concept of hybridization and study of VSEPR & Molecular Orbital theory.

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Semester-III Paper-VI, (CCC-III, Section A) Organic & Inorganic Chemistry

Learning Outcomes:

- 1. Learn the mechanism of name reactions.
- 2. Know the Synthesis, and Reactions of Aromatic Carboxylic and Sulphonic acids.
- 3. Know the Synthesis, and Reactions of Organometallic compounds.
- 4. Learn the synthesis, mechanism, applications of active methylene compounds.
- 5. Gathering basic knowledge of Oils, Fats, Soaps and Detergents.
- 6. Understand the basic principle and application of Qualitative Analysis.
- 7. Know the Classification, Properties of Non-aqueous solvents.

Semester-III Paper-VII, (CCC III, Section B) Physical & Inorganic Chemistry

Learning Outcomes: After completion of these courses students should be able to,

- · Write an expression of Davisson-Germer experiment.
- · Derive Schrondinger wave equation.
- Understand De-Broglie's hypothesis and uncertainty principle.
- Solve the numerical problems based on De-Broglie.
- · Understand concept of entropy.
- Understand statements of first, second and third law of thermodynamics.
- · Know the meaning of phase, component and degree of freedom.
- Know the nuclear structure & different energy of nuclear.
- Understand the different steps & procedure in the gravimetric separation method.

Semester-IV Paper-VIII, (CCC IV, Section A) Organic & Inorganic Chemistry

- 1.Learn the stereoisomerism of Chiral compounds.
- 2. Know the Classification, and Reactions of carbohydrates.
- 3. Know the Synthesis, and Reactions of Nitrogen Compounds.
- 4. Gathering applications of Reagents in Organic Synthesis.
- 5. Understand the Characteristics of d-Block Elements.
- 6. Know the Characteristics of d-Block Elements.

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Semester-IV Paper-IX, (CCC IV, Section B) Physical & Inorganic Chemistry

Learning Outcomes: After completion of these courses students should be able to,

- Know the rate constant and factors affecting rate of reactions.
- Write an expression for rate constant (K) for first order, second order reaction.
- Know the terms cell constant, specific conductivity, equivalent conductivity and molar conductivity.
- Know the applications of Kohlrausch's law.
- Compare between thermal and photochemical reactions.
- Discuss different types of photochemical process.
- Know the preparation, properties, structure & application of different compounds.
- Discuss different inter halogen compounds by preparation, properties, structure and uses.

B. SC. THIRD YEAR (CHEMISTRY) SEMESTER- V & VI

Learning Outcomes:

- 1) To study the variation of Viscosity of Liquid Nitrobenzene with temperature.
- 2) To study the effect of surfactant on surface of water by using Stalagmometer.
- 3) Determination of solubility of an inorganic salt in water at different temperature and hence determine the solubility curve.
- 4) Determination of partition coefficient of iodine between water and CCl4.
- 5) To investigate the absorption of acetic acid from aqueous solution by activated Charcoal and examine the validity of Freundlich and Langmuir's isotherm.
- 6) Investigate the reaction kinetics between potassium persulphate and potassium iodide by Colorimetric measurement.
- 7) Determine the relative strength of given two acids by polarimetric measurement.
- 8) Determine the half wave potential of metal ion by polarography.
- 9) To estimate the amount of Cd++ ion in an unknown solution by polarography.
- 10) To plot the current voltage curve for 0.05 M sulphuric acid using platinum electrode
- 11) To study the polarographic waves produced by dissolved oxygen.
- 12) Determination of formula and stability constant of metal ion complex by polorography.
- 13) Determine the acid and basic dissociation constant of amino acid and hence determine isoelectric point of acid conductometrically.
- 14) To determine the solubility of sparingly soluble salt at different temperature.

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