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NutanVidyalayaSevabhavi Education Society, Umri

LATE BABASAHEB DESHMUKH GORTHEKAR MAHAVIDYALAYA, 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-I: 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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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 haloalkene 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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B.Sc. Second Year Chemistry

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.

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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