

SHRI GURU BUDDHISWAMI SHIKSHAN PRASARAK SANSTHA'S
SHRI GURU BUDDHISWAMI MAHAVIDYALAYA, PURNA (Jn.)
Parbhani (M.S.) India

Department of Chemistry
B.Sc. Chemistry First Year

Aims and Objectives:

1. B. Sc. First year, Chemistry syllabus has been framed as per UGC-CBCS pattern.
2. The students are expected to understand the fundamentals, principles, mathematical concepts and recent developments in the subject area.
3. To enable the students to understand basic concepts, nomenclature, functional groups, hydrocarbons, aromaticity, and fundamental term in organic chemistry.
4. The students are able to know the elements present in nature & its properties.
5. The practical course is in relevance to the theory courses to improve the understanding of concepts in chemistry.
6. It would help in development of practical skills of the students.
7. It is expected to inspire the students towards competitive exams in chemistry

Semester-I

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

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 , cycloalkene 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.

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

Outcomes:

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

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.

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

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.

B. Sc. Third Year: Semester-V
Paper-XII, (DECC-V, Section A)
Organic & Inorganic Chemistry

Objectives:

To acquire basic knowledge about Heterocyclic Compounds, Synthetic Drugs and Dyes, Alkaloids, Vitamins, Pesticides, Co-ordination Chemistry and the chemistry of elements in Medicine.

Course Outcomes:

1. Learn the mechanism of Electrophilic Substitution reaction of Heterocyclic Compounds
2. Know the characteristics, Classification and synthesis of Drugs and Dyes
3. Explaining theories of Color and chemical constitution of Dyes
4. Gathering basic knowledge of Alkaloids, Vitamins and Pesticides
5. Understand the basic principle and application of coordination complexes
6. Know the application of elements in Medicine

Paper-XIII, (DECC-V, Section B)
Physical & Inorganic Chemistry

Objectives:

To enable the students to acquire basic knowledge in Spectroscopy, Chemical Kinetics, Distribution law, Organometallic Compounds and Metal Carbonyls.

Course Outcomes:

1. Understand the concepts of molecular Spectroscopy and its applications
2. Analyze Rotational, Vibrational and Raman, Spectra
3. Interpret the theoretical and experimental methods of chemical kinetics
4. Know the theory and application of Distribution law
5. Explain the Nomenclature, classification and application of Organometallic Compounds
6. Illustrate the classification and application of Metal Carbonyls.

SEC III
DECCP-III
DECC V & VIth (Section-A)
Skill Enhancement Course (A)

Objectives:

To train the students for the use of Software, Excel ,analysis of Soil and Fuel

Course Outcomes:

1. Able to know the use of software and Excel in Chemistry
2. Grasp the concept of Quality Assurance and Quality Control
3. Illustrate the Physical and Chemical analysis of Soil and fuel
4. Be able to evaluate Biological activity and toxicity of organic compounds using softwares.

Semester-VI
(DECC-VI, Section A)
Organic & Inorganic Chemistry
Paper-XIV

Objectives:

To familiarize the students with the concept and principle of Spectroscopy, Amino Acids , Peptides, Molecular Rearranements, Co-ordination theory and Electronic Spectra of transition Metal Complexes

Course Outcomes:

1. To learn the basic principle and terms used in UV, IR & NMR Spectroscopy
2. Acquire the fundamental knowledge of classification and Synthesis of Amino Acid and Peptides
3. Describe the types of Rearrangement
4. Postulates and limitations of VBT and CFT
5. Calculation of CFSE for Tetrahedral and Octahedral Complexes
6. Explain the types of electronic transition and selection rule
7. Apply spectroscopic techniques in analyzing the structure of simple organic Molecules

(DECC-VI, Section B)
Physical & Inorganic Chemistry
Paper-XV

Objectives:

To familiarize the students with the concept and principle Electrochemistry, Thermodynamics, Magnetochemistry, Bioinorganic Chemistry and Metal Clusters

Course Outcomes:

1. Basic concepts of electrochemistry and its applications
2. Understanding the Nernst heat theorem and the Thermodynamics open system
3. Know the Vant-Hoff's Reaction Osochore and numerical on it
4. Explain the types of magnetic substances and effect of temperature on it
5. Biological role of alkali and alkaline earth metal ions
6. Describe the structures and functions of Metal Cluster

SEC IV

DECCP-IV

DECC V & VIth (Section-B)

Skill Enhancement Course (B)

Objectives:

This course aims to give clear understanding of the basic concept of Spectroscopic Technique, cosmetics preparation and basic analytical chemistry

Course Outcomes:

1. Be able to determine the structure by using Spectra
2. To train the students for the preparation of various cosmetics
3. Know the classification and Fatty acid composition of Oils and Fats
4. Analysis of Oils and Fats by physical and chemical method


Principal

PRINCIPAL

Shri Guru Bhuddheswami Mahavidyalaya
Purna (Jn.) Dist. Parbhani