

# **SIR C R REDDY COLLEGE**

*Affiliated to AdikaviNannaya University, Rajamahendravaram*



**2020-21 (EVEN)  
24-03-2021**

**MINUTES OF BOARD OF STUDIES MEETING**

**DEPARTMENT OF CHEMISTRY  
SIR C R REDDY COLLEGE ELURU -AP-  
534007**

**Course outcomes :**

At the end of the Course, the student will be able to ;

**CO-1 :** Understand and explain the differential behavior of organic compounds based on fundamental concepts learnt.

**CO-2 :** Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of reactants involved.

**CO-3 :** Learn and identify many organic reaction mechanisms including free radical substitution, electrophilic addition and electrophilic aromatic substitution.

**CO-4 :** correlate and describe the stereo chemical properties of organic compounds and reactions

**Programme specific outcomes :****Recapitulation of Basics of Organic chemistry:****PSO-1 :Carbon-Carbon sigma bonds(Alkanes & Cyclo alkanes):**

To gain knowledge about the preparation and properties of alkanes and cyclo alkanes

**PSO-2 :Carbon-Carbon Pi bonds(Alkenes & Alkynes):**

To gain knowledge about the preparation and properties of alkenes and alkynes

**PSO-3 :Benzene and its reactivity :**

To gain knowledge about concept of aromaticity& reactions

**PSO-4 :Surface chemistry and chemical bonding:**

To gain knowledge about colloids, adsorption, Valence bond theory , Hybridization, MO theory, HSAB theory.

**PSO-5 :Stereo chemistry of carbon compounds:**

To gain knowledge about molecular representation ,optical isomerism, Chiral molecules D,L,R,S and E,Z-Configuration with examples.

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**Course outcomes :**

At the end of the Course, the student will be able to ;

**CO-1 :** Understand the basic concepts of Absorption spectroscopy, electronic spectroscopy, IR Spectroscopy, H-NMR spectroscopy.

**CO-2 :** Understand the basic concepts of Dilute solutions and Electro chemistry

**Programme specific outcomes :**

**PSO-1 :General features of absorption spectroscopy:**

To gain knowledge about Beers Lamberts Law, Transmittance, Absorbance, single and Double Beam spectrophotometer and applications of Beers Lamberts law

**PSO-2 :Electronic Spectroscopy:**

To gain knowledge about energy levels of molecular orbitals and types of electronic transitions and concepts of chromophores and auxochromes

**PSO-3 : IR Spectroscopy**

To gain knowledge about Modes of vibrations in diatomic and polyatomic molecules and characteristics of absorption bands of different functional groups.

**PSO-4 : Proton Magnetic resonance spectroscopy:**

To gain knowledge about Principles of NMR, chemical shift, Spin-spin coupling and Applications of NMR.

**PSO-5 : Dilute solutions :**

Colligative Properties, Raoult's Law, Experimental determination methods of RLVP, elevation of boiling point, depression in freezing point. Osmotic pressure

**PSO-6 : Electrochemistry-I**

To gain knowledge about Kohlrausch Law, Arrhenius theory, Ostwald's dilution law, Debye-Huckel-Onsager equation, Definition of Transport number and Determination of Hittorf's method.

**PSO-7 : Electrochemistry-II**

To gain knowledge about Nernst equation, SHE, Calomel electrode, Applications of EMF Measurements

**PSO-8 : Phase rule:**

To gain knowledge about one component system, two component system, freezing mixtures

**Course Outcomes:**

At the end of the course, the students will be able to;

**CO-1 :** Understand the basic concepts of environmental chemistry, scope and importance of environment in now a days .

**CO-2 :** Understand the basic concepts of air pollution-sources of air pollution -controlling methods of air pollution.

**CO-3 :** Understand the basic concepts of water quality and criteria for finding of water quality-methods to convert temporary hard water into soft water, methods to convert permanent hard water into soft water.

**CO-4 :** Understand the basic concepts of toxic chemicals in the environment –effects of toxic chemicals.

**CO-5 :** Understand the basic concepts of Eco system functions and types of Eco system.

**Programme specific Outcomes:**

**PSO-1 : INTRODUCTION-CONCEPT OF ENVIRONMENT CHEMISTRY:**

To gain knowledge about scope and importance of environment in now a days

**PSO-2 : AIR POLLUTION:**

To gain knowledge about air pollution-sources of air pollution –controlling methods of air pollution.

**PSO-3 : WATER POLLUTION:**

To gain knowledge about water quality and criteria for finding of water quality-methods to convert temporary hard water into soft water, methods to convert permanent hard water into soft water.

**PSO-4 : CHEMICAL TOXICOLOGY:**

To gain knowledge about toxic chemicals in the environment –effects of toxic chemicals.

**PSO-5 : ECO SYSTEM,SOLID WASTE MANAGEMENT& DISASTER MANAGEMENT:**

To gain knowledge about functions and types of Eco system, solid waste management, Disaster management.

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**Course Outcomes:**

At the end of the course, the students will be able to;

**CO-1 :** Understand the basic concepts of various industrial applications, compositions and uses of coal tar in metallurgy.

**CO-2 :** Understand the basic concepts of types of petroleum products and refining techniques.

**CO-3 :** Understand the basic concepts of LPC, CNG, LNG biogas fuels derived from biomass

**CO-4 :** Understand the basic concepts of solid and semi solid lubricants, viscosity index ,cloud point, pour point and their determinations.

**CO-5 :** Understand the basic concepts of battery components and their rolls, characteristics of batteries.

**Programme specific Outcomes:**

**PSO' -1 :Review of energy sources(renewable and non-renewable):**

To gain knowledge about the basic concepts of various industrial applications, composition and uses of coal tar in metallurgy.

**PSO' -2 :Petroleum and petro chemical industry:**

To gain knowledge about Understand the basic concepts of types of petroleum products and refining techniques

**PSO' -3 :Fractional distillation, Petroleum and Non-Petroleum Fuels:**

To gain knowledge about the LPC,CNG, LNG biogas fuels derived from biomass

**PSO' -4 :Lubricants:**

To gain knowledge about the solid and semi solid lubricants, viscosity index ,cloud point, pour point and their determinations.

**PSO' -5 :Batteries:**

To gain knowledge about the battery components and their rolls, characteristics of batteries

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### **Course Outcomes:**

At the end of the course, the students will be able to;

**CO-1** : Understand the basic concepts of Electronic configuration, atomic size , ionisation enthalpy ,diagonal relationship

**CO-2** : Understand the basic concepts of composition and properties of glasses and manufacture of cement.

**CO-3** : Understand the basic concepts of super phosphate of lime, compound and mixed fertilizers

**CO-4** : Understand the basic concepts of polymer application, industrial applications and preparation, uses of PVC, nylon

**CO-5** : Understand the basic concepts of composition of different types of alloys ,stainless steels, tool steel uses. Rocket

### **Programme specific Outcomes:**

#### **PSO-1 : Recapitulation of s- and p-Block Elements:**

To gain knowledge on Electronic configuration, atomic size, ionisation enthalpy ,diagonal relationship

#### **PSO-2 : Silicate industries:**

To gain knowledge about the composition and properties of glasses and manufacture of cement.

#### **PSO-3 :Fertilizers:**

To gain knowledge on of composition of different types of alloys ,stainless steels, tool steel uses. rocket

#### **PSO-4 :Surface Coatings:**

To gain knowledge on of polymer application, industrial applications and preparation, uses of PVC, nylon

#### **PSO-5 : Alloys:**

To gain knowledge on composition and properties of glasses and manufacture of copellents.

### **Course Outcomes:**

At the end of the course, the students will be able to;

**CO-1** :Understand the basic concepts of constituents of soaps and paints and analysis of soaps and paints

**CO-2** :Understand the basic concepts of constituents oils and fertilizers and analysis of oils and fertilizers.

**CO-3** :Understand the basic concepts of mixture of gases present in fuel gases and coal gas and their analysis

**CO-4** :Understand the basic concepts of different separation techniques of solvent extraction

**CO-5** :Understand the basic concepts of separation techniques of column and chromatography ,Thin layer chromatography, And HPLC ,Applications of these techniques in different industries.

### **Programme specific Outcomes:**

#### **PSO-1 :Analysis of soaps :**

To gain knowledge about the constituents of soaps and paints and analysis of soaps and paints

#### **PSO- 2 :Analysis of oils :**

To gain knowledge about the constituents oils and fertilizers and analysis of oils and fertilizers.

#### **PSO- 3 :Analysis of Fertilizers:**

To gain knowledge about the mixture of gases present in fuel gases and coal gas and their analysis

#### **PSO-4 :Gas analysis :**

To gain knowledge about the different separation techniques of solvent extraction

#### **PSO-5 :Separation techniques:**

To gain knowledge about separation techniques of column and chromatography, Thin layer chromatography, And HPLC. Applications of these techniques in different industries



