B.L.D.E.Association's

S.B.Arts and K.C.P. Science College

Vijayapur

DEPARTMENT OF CHEMISTRY

Programme Outcomes (Pos) ,

Programme Specific Outcomes(PSOs)

and Course Outcomes (Cos)

PROGRAMME OUTCOMES (Pos)

PO1: Students will gain elementary basic knowledge in chemistry and become familiar with different branches of chemistry..

PO2 : Students will appreciate the role of Chemistry in daily life , nature .

PO3: Students will get opportunities to enter into higher education or job.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

PSO1- To develop strong and competent knowledge in theoretical and practical chemistry.

PSO2- Students will become able to explain structure, reactions and mechanism of various reactions belonging to different clasess of organic and inoraganic compounds.

PSO3: Students will understand various processes, laws and theorems of physical chemistry and will become able to solve the numerical problems.

PSO4:Students will develop various technical and analytical skills through laboratory training.

PSO5:Students will understand working principle and basic applications of various spectroscopic and chromatographic techniques.

POS6: Students will become aware about the importance and impact of chemistry on environment and daily life.

continued

PSO7 : Students are introduced to research field through various analytical skills and their application in research.

COURSE OUTCOMES

Class : B.Sc I sem

CO1: Understanding of atomic structure through various atomic models , quantum numbers and rules in filling up of electrons in different shells, subshells and orbitals.

CO2: Imparting essential knowledge in chemical bonding, factors affecting bonding and Born-Haber cycle application to NaCl.

CO3: Various methods in analysis to solve numerical and analytical problems

CO4: To develop skills for quantitative analysis using different types of titrations.

CO5: Students will gain theoretical knowledge in analytical techniques in purification of organic compounds such as crystallization, sublimation, MP and BP.

CO6: To know stereochemistry and various conformations of organic molecules.

CO8: To know basic principle of UV Spectroscopy, electronic transitions and its application .

CO9: Understanding gaseous state through gas laws and relation ship between various constants.CO10: problem solving various methods.

Continued

CO10: Understanding various concepts of solutions and Nernst distribution law.

COURSE : B.Sc I Semester (Theory) **Course Code :A240**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	3			3						
CO2	2			2	3					
CO3						3				2
CO4	2		2				3			
CO5		2					3			3
CO6	2			2		3				
CO7						2		3		3
CO8	3		3	2		3				
CO9						3				
CO10	2			2		2				

COURSE : B.Sc I Semester (Practical) **Course Code :A242**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
pCO1	2						3			3

3 =

2=

1=

continued

I sem

CO1: understanding of atomic model,theorems,principle, hypothesis.

CO2: experimental approaches to derivations.

CO3:effective learning of theorms and various bonds.

CO4: Quantitative analysis methods.

CO5: determination of concentration and estimating the amount.

CO6: fundamental methods of purification of compounds.

CO8: Spectroscopic method to study organic molecule structure.

CO9: study of laws and theries.

CO10: problem solving various methods.

COURSE : B.Sc I Semester (Theory) Course Code :A240

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	3			3						
CO2	2			2	3					
CO3						3				2
CO4	2		2				3			
CO5		2					3			3
CO6	2			2		3				
CO7						2		3		3
CO8	3			2		3				
CO9						3				
CO10	2			2		2				

COURSE : B.Sc I Semester (Practical) Course Code :A242

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
pCO1	2						3			3

3 =

2=

1=

continued

II semester

CO1: studying hybridization,geometry of inorganic molecules based on various theories.

CO2: advantages of organic reagents in inorganic analysis.

CO3: structure determination of solids and liquids using various tecniqes.

CO4: preparation and reactions of alkenes,dienes alkynes.

CO5: aromaticity and reaction mechanism of hydrocarbans.

CO6: different process energies in thermodynamics.

PCO1: identification of organic compounds and preparation of their derivative.

COURSE : B.Sc II Semester (Theory) **Course Code :B240**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	3			2						
CO2	2	2	3				3			
CO3								3		
CO4		2			3					
CO5					3					
CO6						3				
CO7		3				2				
CO8				2						

COURSE : B.Sc II Semester (Practical) **Course Code :B242**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
pCO1			3				3			2

3 =

2=

1=

Continued

III SEM

CO1: studying various metallurgical process, concept involved in extraction of metals.

CO2: properties and reaction of non- aqueous solvents taking NH_3,HF as examples.

CO3: classification and different concepts of acids and bases.

CO4: orientation of substituents in aromatic compounds with different fundamental groups.

CO5: classification nomenculture and reaction mechanisms of alcohols and phenols.

CO6: molecular weight determination based on the colligative properties.

CO7: basic concept and structure determination using IR spectroscopy.

CO8: concepts of themodynamic and solving numerical problems on it.

PCO1: determination of rate constant and of I and II order kinetics.

PCO2: experimental determination of properties of liquids.

COURSE : B.Sc III Semester (Theory) **Course Code :C240**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	2	2	2	3					3	
CO2			2							2
CO3	2			3	3					
CO4					3					3
CO5	3				3					
CO6	2	2		3		3	2			3
CO7								3		2
CO8						3				

COURSE : B.Sc III Semester (Practical) **Course Code :C242**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
pCO1	2		2				3			3
Pco2	2		2				3			3

3 =

2=

1=

Continued

IV SEM

CO1: general characteristic s and properties of d and f block elements

CO2: elements biological process.

CO3: role and impact of chemistry on environment.

CO4: nomenculture structure, classification and reactions of aldehydes ketones –COOH,ArNH2 ethers,and epoxides.

CO5: gaining therotical knowledge of electrolytes and application of conductance measurement.

CO6:derivation of rate constant for II order reaction and determination by different methods.theories of reaction rates.

PCO1: quantitative analysis of simple inorganic salts.

COURSE : B.Sc IV Semester (Theory) **Course Code :D240**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	3			3						
CO2									3	
CO3	2								3	2
CO4		2			3					
CO5	2		2			3				
CO6			3			3				

COURSE : B.Sc IV Semester (Practical) **Course Code :D242**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
pCO1				2					2	3

3 =

2=

1=

continued

V paper – 1

CO1: nomenculture , isomerisation & theories of coordination chemistry.

CO2: therotical study of gravimetric analysis.

CO3: types, structure,& application of inorganic polymers.

CO4: understanding the concept of greenchemistry.

CO5: classification and aromaticity of heterocyclic compounds.

CO6: synthetic applications & reaction mechanism. Of enolates.

CO7: isolation, synthesis constitution of alkaloids.

CO8: determination of properties of bonds rotational, vibrational spectra.

CO9: application of phase rule to different component systems.

PCO1: preparation of organic compounds.

COURSE : B.Sc V P-1 Semester (Theory) **Course Code :E250**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1					3					
CO2		2	2				3			3
CO3				2	2				3	
CO4	3					3			3	2
CO5		2			3					
CO6					3					
CO7			3		3				2	2
CO8	2							3	2	2
CO9	2					3				

COURSE : B.Sc V P-1 Semester (Practical) **Course Code :E252**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
pCO1			2	2			3			3

3 =

2=

1=

Continued

V paperII

CO1: synthesis, significance, types.& applications of alloys, abrasives, and glass.

CO2: manufacture, composition characteristic of fuels, cement and pigment.

CO3: preparation mechanism of action and application of oxidizing and redusing agents.

CO4: principle and instrumentation of mass spectroscopy.

CO5: colour & constitution, synthesis of different dyes.

CO6: study of theories of absorption & industrial application of catalyst.

CO7: study of general aspects of chemical equilibrium & kinetics of chain reactions.

PCO1: volumetric analysis of iron, copper, zinc & calcium.

PCO2: experimental study of conductometric titrations.

COURSE : B.Sc V P-2 Semester (Theory) **Course Code :D240**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	2	2	2	3					2	
CO2				3						3
CO3	2		2		3					3
CO4	2						3	3		
CO5					3					3
CO6						3				
CO7						3				2

COURSE : B.Sc V P-2 Semester (Practical) **Course Code :D242**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
pCO1	2						3		2	3

3 =

2=

1=

Continued

VI Paper I

CO1: study of CFT, with respect to complexes of C.N 4 and 6.CFSE calculation and properties of complexes.

CO2: formation and stability constants of metal-ligand eqilibria factors influencing stability of metal complexes and chelates.

CO3: 18 electron rule with respect to OMC structure, bonding in ferrocene, zieses salt.

CO4:Howorth and conformational formulae of glucose and fructose there synthesis and inter combination.

CO5: classification and importance of vit A, B_6, B_{12} C, D & E & synthesis of amino acids,peptides, proteins, and terpinoids.

CO6: PE curve for BMO& ABMO & electronic transitions, dipolemoment and its application.

CO7: determination and classification of molar masses of polymers by using different methods.

CO8: study of different photoelectric methods.

PCO1: organic estimation & determination of saponification & iodine value of oils.

COURSE : B.Sc V I P-1 Semester (Theory) **Course Code :F250**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1	3			3						2
CO2	3			3						
CO3	2		3	3						
CO4		2	2		3				3	2
CO5		3			3				3	2
CO6	2					3		3		2
CO7	2					3	2			2
CO8				3					2	

COURSE : B.Sc V P-1 Semester (Practical) **Course Code :F252**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
pCO1			3		3				3	3

3 =

2=

1=

continued

VI Sem PaperII

CO1: brief account of paper & coloumn chromatography.

CO2: principle, instrumentation & application of different analytical methods.

CO3: study of nutrients and determination of various parameters of soil nutrients.

CO4: electronic spectrum study of metal complexes.

CO5: synthesis and classification & uses of chemotherapatic drugs.

CO6: manufacture & cleaning action of soaps and detergents.

CO7: study of reaction mechanism of various named reactions

CO8: basics of NMR spectroscopy in the study of some simple organic compounds.

CO9: types of electrochemical cells & electrodes& emf measurements.

CO10: study of photochemical laws quantum efficiency & photochemical process.

PCO1: gravimetric analysis of ores.

PCO2: experimental study of potentiometric titrations & colorimetric methods. By using Beers lamberts law.

COURSE : B.Sc VI P-2 Semester (Theory) **Course Code :F260**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
CO1		3		3			3			3
CO2	2			2				3		3
CO3		3		3						3
CO4				2			3			
CO5	2	3	2		2				3	
CO6				2	3					
CO7					3					2
CO8							2	3		3
CO9	2		2			3	2			2
CO10						3	2			

COURSE : B.Sc VI P-2 Semester (Practical) **Course Code : F262**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7
pCO1	2		2				3			3
PCO2						3	3			

Continued

EVALUATION MAPPING

THEORY:

Marks Distribution : 1. Internal Assessment = 20 marks

2. University Examination = 80 marks

Sl No	Parameter	Percentage (%)
1	Knowledge	20
2	Understanding	25
3	Numericals	10
4	Descriptive	45

continued

Class : B.Sc V P-1 Semester (Inorganic)

Sl No	Parameter	Percentage
1	Accuracy	63
2	Technique / Systematic Percentage	13
3	Record Book	12
4	Viva - Voce	12

Class : B.Sc V P-2 Semester (Organic)

Sl No	Parameter	Percentage
1	Yield	40
2	Technique / Systematic Percentage	20
3	Purity	10
4	MP	5
5	Record Book	12.5
6	Viva - Voce	12.5

Class : B.Sc V P-2 Semester (Physical)

Sl No	Parameter	Percentage
1	Accuracy	45
2	Calculation/Graph	22.5
3	Technique / Systematic Percentage	7.5
4	Record Book	12.5
5	Viva - Voce	12.5

Continued

Practical Examination

Marks Distribution : 1. Internal Assessment = 10 marks
2. University Examination = 40 marks

Class : B.Sc I Semester

Sl No	Parameter	Percentage
1	Accuracy	63
2	Technique / Systematic Percentage	13
3	Record Book	12
4	Viva - Voce	12

Class : B.Sc II Semester

Sl No	Parameter	Percentage
1.	Preliminary and Solubility	12.5
2.	Melting Point/Boiling Point	7.5
3.	Elements Detection	10
4.	Functional Group	10
5.	Identification and Structure	10
6.	Preparation of Derivative	10
7.	MP of Derivative	7.5
8.	Technique and Presentation	7.5
9.	Viva –Voce	12.5
10.	Jouranl	12.5

Class : B.Sc III Semester

Sl No	Parameter	Percentage
1	Accuracy	45
2	Calculation/Graph	22.5
3	Technique / Systematic Percentage	7.5
4	Record Book	12.5
5	Viva - Voce	12.5

Class : B.Sc IV Semester

Sl No	Parameter	Percentage
1	Preliminar	20
2	Positive radical	30
3	Negative radicals	25
4	Journal	12.5
5	Viva-voce	12.5

Continued

Class : B.Sc VI P-1 Semester (Inorganic)

Sl No	Parameter	Percentage
1	Accuracy	40
2	Calculation/Graph	10
3	Record Book	12.5
4	Viva - Voce	12.5
5	Project	25

Class : B.Sc VI P-2 Semester (Physical)

Sl No	Parameter	Percentage
1	Accuracy	45
2	Calculation/Graph	22.5
3	Technique / Systematic Percentage	7.5
4	Record Book	12.5
5	Viva - Voce	12.5

Class : B.Sc VI P-2 Semester (Organic)

Sl No	Parameter	Percentage
1	Blank Titration	20
2	Main Titration	30
3	Technique	12.5
4	Calculation	12.5
5	Journal	12.5
6	Viva-voce	12.5

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