

B.L.D.E.Association's

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

Vijayapur

PG DEPARTMENT OF CHEMISTRY



Programme Outcomes (POs) ,
Programme Specific Outcomes(PSOs)
and Course Outcomes (COs)

B.L.D.E. Association's
S.B. Arts and K.C.P Science College Bijapur
Post Graduate Department of Chemistry
POS 2019-2020
Subject: Analytical Chemistry

PO1: In advance elementary/fundamental knowledge.

PO2: Critical thinking, scientific methods to design, carry out analytical the results of experiments and get awareness of the impact of chemistry on environment, society, etc.

PO3: Higher education, competitive, Reputed Research laboratory.

PO4: Industrial application.

PSO1: To develop strong and compete knowledge in theoretical and practical chemistry.

PSO2: Able to explain Theory, Principle, Postulates, Methods, explaining instrumentation, Derivation, calculations and to calculate the physical and electrochemical parameters

PSO3: To recognize the various laws and theories and solving numerical problems.

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

POS5: To create awareness the importance. And impact of chemistry on environment.

M.Sc 1st Sem: Analytical Chemistry

CO1: Review of different types of electromagnetic radiations.

CO2: Study the types of transitions and their energy levels.

CO3: Understand the selection rules.

CO4: Study the classification of polyatomic molecules (CO_2 , CH_3F and BCl_3) based on moment of inertia-linear, symmetric top and asymmetric top.

CO5: To know the detail study of UV-Visible Spectroscopy.

C06: To study the λ_{\max} for polyenes, α,β -unsaturated aldehydes and ketones (Woodward-Fieser rules), aromatic systems and their derivatives.

C07: To know about the number of degrees of freedom of vibration, modes of vibration and, Vibrational coupling overtones and Fermi resonance.

C08: To study the brief discussion of identification of functional groups alkanes, alkenes, aromatics, carboxylic acids, carbonyl compounds (aldehydes and ketones, esters), amides and amines.

C09: To study the principle, instrumentation and applications of Raman Spectra

COURSE : M.Sc 1st Semester (Theory)


Course Code : CHES-1.5

Subject: Analytical Chemistry

Course Outcomes	P01	P02	P03	P04	PS01	PS02	PS03	PS04	PS05
C01	2	2	3	3	1	3	3	2	3
C02	1	1	3	2	3	3	3	2	3
C03	-	2	1	3	3	3	3	2	3
C04	-	3	2	2	3	3	3	2	3
C05	3	2	1	3	3	3	3	2	3
C06	2	3	2	1	3	3	3	2	3
C07	2	1	1	3	3	3	3	2	3
C08	-	3	2	1	3	3	3	2	3
C09	-	3	1	1	3	3	3	2	3


Co-ordinator,
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Vijayapur.


Principal,
S.B.Arts & K.C.P. Science College
BIJAPUR.

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


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PG DEPARTMENT OF CHEMISTRY



Programme Outcomes (Pos) ,
Programme Specific Outcomes(PSOs)
and Course Outcomes (Cos)

B.L.D.E. Association's
S.B. Arts and K.C.P Science College Bijapur
Post Graduate Department of Chemistry
POS 20119-2020
Subject: Organic Chemistry

PO1: In advance elementary/ fundamental knowledge.

PO2 : Critical thinking, scientific methods to design, carry out analytical the results of experiments and get awareness of the impact of chemistry on environment, society,etc. .

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PO4: Industrial application.

PSO1-to develop strong and compete knowledge in theoretical and practical chemistry.

PSO2-Able to explain Theory, Principle, Postulates, Methods, explaining instrumentation, Derivation, calculations and to calculate the physical and electrochemical parameters

PSO3: To recognize the various laws and theories and solving numerical problems.

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

POS5: To create awareness the importance. And impact of chemistry on environment.

Sem 1st: Organic Chemistry

CO1: Concept of hybridization : sp^3 , sp^2 , sp – with examples.

CO2: Electronic effects : Inductive, electronic, resonance and hyperconjugation.

CO3: Classification of organic reagents and reactions.

CO4: Reactive Intermediates : carbocations, carbanions, free radicals, carbenes, nitrenes, and arynes- their formation, stability, structure and reactions.

CO5: Organic acid and bases : Effect of substituents with examples

CO6: **Addition reactions:** Addition to Carbon-Carbon double bond.

CO7: Elimination reactions: E1, E2, E1CB mechanisms.

C08: substitution reactions:

C09: STEREOCHEMISTRY

PC01: Preparation p-bromo aniline from aniline.

PC02: Preparation of p-nitro aniline from aniline.

PC03: Preparation of benzoic acid from benzaldehyde.

PC04: Preparation of phenyl azo beta naphthol.

PC05: Preparation of 1-phenyl-3-methyl-pyrazolone.

COURSE : M.Sc I Semester (Theory&Practical)

Course Code :

Subject: Organic Chemistry

Course Outcomes	PO1	PO2	PO3	PO4	PS01	PS02	PS03	PS04	PS05
C01	2	3	2	2	2	3	3	-	-
C02	1	2	3	1	3	3	3	1	-
C03	-	2	1	3	3	3	3	1	-
C04	2	3	1	-	3	2	3	1	-
C05	3	3	-	-	3	3	3	-	-
C06	1	3	2	1	3	3	3	-	-
C07	2	3	1	3	3	3	3	-	-
C08	-	3	1	1	3	3	3	--	-
C09	-	3	1	1	3	3	3	--	-
C010	-	3	1	1	3	3	3	--	-
PC01	2	3	-	3	-	-	-	3	3
PC02	2	2	-	3	-	-	-	3	3
PC03	2	2	-	3	-	-	-	3	3
PC04	2	2	-	3	-	-	-	3	3
PC05	2	2	-	3	-	-	-	3	3

M Sc 2nd Sem

C01: C-C bond forming reactions.

C02: C-N bond forming reactions.

C03: C-O bond forming reactions.

C04: C-Cl bond forming reaction: Hell-Volhard-Zelinski reaction.

C05: Oxidation reactions.

C06: Reduction reactions.

C07: Rearrangement reactions involving migration to electron deficient carbon

C08: Rearrangement reactions involving migration to electron deficient nitrogen

C09: 3-Membered heterocyclic compounds

C010: 4-Membered heterocyclic compounds with one and two hetero atoms.

C011: 6-Membered heterocyclic compounds with one and two hetero atoms

PC01: ANALYSIS OF BINARY ORGANIC MIXTURE

PC02: Chromatographic techniques.

COURSE : M.Sc II Semester (Theory&Practical)

Course Code :

Subject: Organic Chemistry

Course Outcomes	P01	P02	P03	P04	PS01	PS02	PS03	PS04	PS05
C01	3	3	3	-	3	3	3	-	-
C02	3	3	2	2	3	3	2	-	-
C03	3	2	3	3	3	3	3	-	-
C04	-	2	-	-	3	3	3	-	-
C05	1	3	1	-	3	3	3	-	-
C06	2	3	2	2	3	3	3	-	-
C07	-	1	1	3	3	3	3	-	-
C08	1	3	2	3	3	3	3	--	-
C09	2	3	2	2	3	3	3	--	-
C010	1	3	3	3	3	3	3	--	-
C011	2	2	-	2	2	2	3	3	3
PC01	2	2	-	3	-	-	-	3	3
PC02	2	2	-	3	-	-	-	3	3

M Sc3rd sem

CO1: REAGENTS IN ORGANIC SYNTHESIS

CO2: PHOTOCHEMISTRY

CO3: Norrish type I and Norrish type II reactions

CO4: Pericyclic Reactions: Classification of pericyclic reactions.

CO5: Electrocyclic reactions.

CO6: Sulphonamides: Introduction, classification, synthesis and SAR studies

CO7: Antimalarials: Introduction, classification, synthesis and drug action

CO8: Analgesics: Introduction, classification, synthesis and drug action

CO9: Anti-inflammatory: Introduction, classification, synthesis and drug action

CO10: pharmacokinetics, pharmacodynamics

PCO1: Estimation of aniline and glucose.

PCO2: Determination of saponification value of oils.

PCO3: Determination of iodine value of oils.

COURSE : M.Sc III Semester (Theory&Practical)

Course Code :

Subject: Organic Chemistry

Course Outcomes	P01	P02	P03	P04	PS01	PS02	PS03	PS04	PS05
C01	2	3	2	-	3	2	3	-	-
C02	3	2	2	3	3	3	3	-	-
C03	2	2	2	3	3	3	3	-	-
C04	-	2	2	3	3	3	3	-	-
C05	3	2	2	1	3	3	3	-	-
C06	3	1	2	3	3	3	3	-	-
C07	1	2	2	3	3	3	3	-	-
C08	-	1	2	3	3	3	3	--	-
C09	1	3	3	3	3	3	3	--	-
C010	1	3	2	3	3	3	3	--	-
PC01	3	3	-	2	2	2	3	3	3
PC02	2	3	-	3	-	-	-	3	3
PC03	3	2	-	3	-	-	-	3	3

M Sc IVth sem

C01: Designing the synthesis based on retrosynthetic analysis.

C02: Disconnection Approach: An introduction to synthons and synthetic equivalents

C03: One Group C-C Disconnections.

C04: Two Group C-C Disconnections.

C05: BIOORGANIC POLYMERS.

C06: ALKALOIDS AND TERPENOIDS.

C07: STEROIDS, ANTIBIOTICS AND PROSTAGLANDINS.

C08: Understanding Optical properties in solids.

PC01: Isolation of nicotine from tobacco.

PC02: Isolation of caffeine from tea.


PC03: Isolation of piperine from pepper.

COURSE : M.Sc IV Semester (Theory&Practical)**Course Code :****Subject: Organic Chemistry**

Course Outcomes	P01	P02	P03	P04	PS01	PS02	PS03	PS04	PS05
C01	-	-	3	3	3	3	3	-	-
C02	-	2	3	3	3	3	3	-	-
C03	2	3	2	3	3	3	3	-	-
C04	1	2	2	3	3	3	3	-	-
C05	1	2	2	1	3	3	3	-	-
C06	2	1	2	2	3	3	3	-	-
C07	-	2	3	3	3	3	3	-	-
C08	-	1	2	3	3	3	3	--	-
PCO1	3	3	-	2	2	-	-	2	3
PCO2	3	3	-	3	-	-	-	3	3
PCO3	3	3	-	3	-	-	-	3	3


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Practical Examination

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

Class : M.Sc I Semester Organic Practical-I

Sl No	Parameter	Percentage
1	Accuracy	25
2	Technique / Systematic Percentage	05
3	Record Book	05
4	Viva - Voce	05

Class : M.Sc II Semester Organic Practical-II

Sl No	Parameter	Percentage
1	Preliminary	05
2	Analysis of binary mixture	15
3	Derivative preparation	10
4	Record Book	05
4	Viva-Voce	05

Class : M.Sc III Semester Organic Practical-III


Sl No	Parameter	Percentage
1	Accuracy	25
2	Technique / Systematic Percentage	05
3	Record Book	05
4	Viva - Voce	05

Class : M.Sc IV Semester Organic Practical-IV

Sl No	Parameter	Percentage
1	Accuracy	25
2	Technique / Systematic Percentage	05
3	Record Book	05
4	Viva - Voce	05


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Programme Outcomes (POS) ,
Programme Specific Outcomes(PSOs)
and Course Outcomes (Cos)

B.L.D.E. Association's
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Post Graduate Department of Chemistry
POS 20119-2020
Subject: Physical Chemistry

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PSO3: To recognize the various laws and theories and solving numerical problems.

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

POS5: To create awareness the importance. And impact of chemistry on environment.

Ist Semester

Subject : Physical Chemistry-1

CO1: Fundamental laws of quantum chemistry and comparative between classical and quantum Theory.

CO2: Laws and principle of photoelectric, Compton and de Broglie hypothesis .

CO3: Basic postulates of quantum mechanics.

CO4: To understand the Schrödinger's equation, Physical significance and characteristics of wave function.

CO5: Review of basic principles of thermodynamics.

CO6: Derivation of the Various Thermodynamic parameters.

CO8: To study of basic principle and equation of conductance.

CO9: To understand and derivation of Debye Huckel Onsager equation .

CO10: To understand the basic principle of batteries.

PSO1: To determine the strength, equivalent conductance of some electrolytes.

CO11: To understand the Basic concepts polymers and their types

CO12: To understand the fundamentals of nanoscience and methods to fabrication of nanoparticles

PCO1: Analysis of binary mixture of two miscible liquids by viscometry and the relation between viscosity of solution and electrical conductivity

PCO2: Potentiometric titration of halides in a mixture of Cl⁻, Br⁻ and I⁻ with AgNO₃

PCO3: Titration of phosphoric acid solution with NaOH using quinhydrone electrode by Potentiometrically

PCO4: Precipitation titration of BaCl₂ vs Na₂SO₄ by conductometrically

PCO5: Precipitation titration of KCl vs AgNO₃ by conductometrically

PCO6: Verification of Beers lamberts law by colorimetric method and calculation of molar extinction coefficient (molar absorption co-efficient)

COURSE : Physical Chemistry (Theory & Practical) Subject: Physical Chemistry

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	2	3	1	2	2	-	-
CO2	1	2	2	3	3	02		
CO3	-	2	1	3	3	3	3	1
CO4	-	3	1	-	3	3	3	1
CO5	2	2	-	-	3	3	3	-
CO6	1	3	2	1	3	3	3	-
CO7	2	3	1	3	3	3	3	-
CO8	-	3	1	1	3	3	3	--
CO9	-	3	1	1	3	3	3	--
CO10	-	3	1	1	3	3	3	--
CO11	2	2	-	3	-	-	-	3

COURSE : M.Sc Ist Semester (Practical)

Subject:Physical Chemistry

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5
PCO1	2	2	-	3	-	-	-	3
PCO2	2	2	-	3	-	-	-	3
PCO3	2	2	-	3	-	-	-	3
PCO5	2	2	-	3	-	-	-	3
PCO5	2	2	-	3	-	-	-	3
PCO5	2	2	-	2	-	-	-	3

II semester

Subject : Physical Chemistry-II

CO1: To understand the basic concept of statistical thermodynamics.

CO2: To know the applicative part of the Maxwell Boltzmann statistics, Bose-Einstein statistics, Fermi-dirac statistics.

CO3: Derive the all partition function and there concept .

CO4: To know the simple harmonic oscillator in classical mechanics and quantum mechanics.

CO5: To study the applicative part of the quantum mechanics.

CO6: To study the chemical kinetics and methods of fast and slow reactions.

CO7: To know the energy relationship and equations.

CO8: Fundamental laws and basic concept of photochemistry and photodegradation.

CO9: A review of laws of photochemistry. Physical process and properties and reaction of Photo catalyst.

PCO1: Kinetics of acid catalyzed of hydrolysis of methyl acetyl and determination of energy activation.

PCO2: To determine the concentration of H_2SO_4 , CH_3COOH and CuSO_4 in a given solution by conductometry

PCO3: To compare the strength of the weak acid by conductance method (CH_3COOH and HCOOH)

PCO4: To determination of enthalpy of solution of KNO_3 by solubility method

COURSE : M.Sc II Semester (Theory)**Subject: Physical Chemistry**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	2	-	3	3	3	-
CO2	1	3	2	2	3	3	3	-
CO3	3	2	3	3	3	3	3	-
CO4	-	3	-	-	3	3	3	-
CO5	1	3	1	-	3	3	3	-
CO6	2	3	2	2	3	3	3	-
CO7	-	3	1	3	3	3	3	-
CO8	1	3	2	3	3	3	3	--
CO9	2	3	2	2	3	3	3	--

COURSE : M.Sc II Semester (Practical)**Subject :Physical Chemistry**

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5
PCO1	2	2	-	3	-	-	-	3
PCO2	2	2	-	3	-	-	-	3
PCO3	2	2	-	3	-	-	-	3
PCO4	2	2	-	3	-	-	-	3

III SEM**Subject : Physical Chemistry-III**

CO1: To understand the basic concept of Surface chemistry.

CO2: To study the Basic principles of catalysis and determine rate of reaction by complex mechanisms.

CO3: To study the Fundamentals and importance of material chemistry,

CO4: To study the Methods of preparation nanoparticle by using various methods.

CO5: To derive the Ist and IInd opposing reactions of rate of chemical kinetics.

CO6: To study the reaction and mechanism to derive the mathematical treatment.

CO7: To study the applicative aspect of polymers and dendrimers .

CO8: To study the fabrication polymer, shape and object of polymers.

PCO1: Verify the degree of Debye-Huckel and Onsagar equivalent conductance for

electrolytes (NaCl, HCl) and determine the constant
 PCO2: To determination of properties of liquids.

PCO2: To study the hydrolysis of methyl acetate catalysed by hydrochloric solution by equimolar solution of Urea-HCl solution and hence determine the degree of hydrolysis of salt

PCO3: To determine the molecular weight of high polymer PVA from viscosity measurements

PCO4: To investigate the reaction between K₂S₂O₈ and KI by colorimetric method

PCO5: Determination of heat of solution of benzoic acid by solubility method

PCO6: To determine the COD in the given water sample

COURSE : M.Sc IIIrd Semester (Theory)

Subject: Physical Chemistry

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	1	3	2	-	3	3	3	-
CO2	1	2	3	3	3	3	3	-
CO3	1	2	2	3	3	3	3	-
CO4	-	2	2	3	3	3	3	-
CO5	3	2	2	1	3	3	3	-
CO6	3	1	2	3	3	3	3	-
CO7	1	2	2	3	3	3	3	-
CO8	-	1	2	3	3	3	3	--

COURSE : M.Sc III Semester (Practical)

Subject : physical Chemistry

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5
PCO1	2	2	-	2	2	2	3	3
PCO2	2	2	-	3	-	-	-	3
PCO3	2	2	-	3	-	-	-	3
PCO4	2	2	-	3	-	-	-	3

IV SEM

Subject: Physical Chemistry-IV

CO1: To study the applicative part of the superconductors of various process

CO2: To understand the fundamentals of magnetochemistry.

CO3: Basic concept of Partial molar properties.

CO4: To study the law, principle, properties, derivation, equation and process of partial molar properties.

CO5: To study the detailed study of atomic spectra and atomic structure.

CO6: To study the space quantization of some effects.

CO7: To study the applicative part of electrochemistry and electroplating.

CO8: To know the summary of corrosion and plating.

PCO1: Determine the molecular radius of glycerol by viscosity method.

PCO2: To determine the molar refraction of methylacetate, ethylacetate, n-hexane and CCl₄ and hence to calculate the refraction of C, H and Cl atom.

PCO3: Equivalent conductance of infinite dilution of weak electrolyte (CH₃COOH) by Kohlrausch's law.

PCO4: To verify Beer's Lambert law for Cu-NH₃ complex and hence to determine the unknown Cu ion concentration in a given solution.

COURSE : M.Sc IV Semester (Theory)


Subject: Physical Chemistry

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	3	3	3	3	3	-
CO2	-	1	3	3	3	3	3	-
CO3	2	3	1	3	3	3	3	-
CO4	1	2	2	3	3	3	3	-
CO5	1	2	2	1	3	3	3	-
CO6	2	1	2	2	3	3	3	-
CO7	1	2	3	3	3	3	3	-
CO8	-	1	2	3	3	3	3	--

COURSE : M.Sc IV Semester (Practical)

Subject: Physical Chemistry

Course Outcomes	PO1	PO2	PO3	PSO1	PSO2	PSO3	PSO4	PSO5
PCO1	2	2	-	2	2	-	-	3
PCO2	2	2	-	3	-	-	-	3
PCO3	2	2	-	3	-	-	-	3
PCO4								


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Mapping of Course Outcomes with Programme Outcomes and
Programme Specific Outcomes

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


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Practical Examination

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

Class : M.Sc I Semester

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

Class : M.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 : M.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 : M.Sc IV Semester

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


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B.L.D.E.Association's

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

Vijayapur

PG DEPARTMENT OF CHEMISTRY



Programme Outcomes (POs) ,
Programme Specific Outcomes(PSOs)
and Course Outcomes (COs)

B.L.D.E. Association's
S.B. Arts and K.C.P Science College Bijapur
Post Graduate Department of Chemistry
POS 2019-2020
Subject: Spectroscopy

PO1: In advance elementary/fundamental knowledge.

PO2: Critical thinking, scientific methods to design, carry out analytical the results of experiments and get awareness of the impact of chemistry on environment, society, etc.

PO3: Higher education, competitive, Reputed Research laboratory.

PO4: Industrial application.

PSO1: To develop strong and compete knowledge in theoretical and practical chemistry.

PSO2: Able to explain Theory, Principle, Postulates, Methods, explaining instrumentation, Derivation, calculations and to calculate the physical and electrochemical parameters

PSO3: To recognize the various laws and theories and solving numerical problems.

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

POS5: To create awareness the importance. And impact of chemistry on environment.

M.Sc 1st Sem: Spectroscopy-I

CO1: Review of different types of electromagnetic radiations.

CO2: Study the types of transitions and their energy levels.

CO3: Understand the selection rules.

CO4: Study the classification of polyatomic molecules (CO_2 , CH_3F and BCl_3) based on moment of inertia-linear, symmetric top and asymmetric top.

CO5: To know the detail study of UV-Visible Spectroscopy.

C06: To study the λ_{\max} for polyenes, α,β -unsaturated aldehydes and ketones (Woodward-Fieser rules), aromatic systems and their derivatives.

C07: To know about the number of degrees of freedom of vibration, modes of vibration and, Vibrational coupling overtones and Fermi resonance.

C08: To study the brief discussion of identification of functional groups alkanes, alkenes, aromatics, carboxylic acids, carbonyl compounds (aldehydes and ketones, esters), amides and amines.

C09: To study the principle, instrumentation and applications of Raman Spectra

COURSE : M.Sc 1st Semester (Theory)

Course Code : CHGT-1.4

Subject: Spectroscopy-I

Course Outcomes	P01	P02	P03	P04	PS01	PS02	PS03	PS04	PS05
C01	2	2	3	3	1	3	3	2	3
C02	1	1	3	2	3	3	3	2	3
C03	-	2	1	3	3	3	3	2	3
C04	-	3	2	2	3	3	3	2	3
C05	3	2	1	3	3	3	3	2	3
C06	2	3	2	1	3	3	3	2	3
C07	2	1	1	3	3	3	3	2	3
C08	-	3	2	1	3	3	3	2	3
C09	-	3	1	1	3	3	3	2	3

M.Sc 2nd Sem: Spectroscopy-II

C01: To understand the magnetic properties of nuclei.

C02: To learn about the various factors influencing in NMR spectroscopy.

C03: To know about the principle, instrumentation and applications of FT-NMR spectroscopy.

C04: To study the brief discussion of simplification of complex spectra.

C05: To know the detail study of the ¹³C-NMR spectroscopy.

C06: To learn about the two dimensional NMR spectroscopy (COSY, NOESY, DEPT Spectra and MRI).

C07: To know the detail study of the mass spectroscopy.

C08: To understand the basic theory, principle and instrumentation of different mass spectroscopy techniques.

C09: To know about the modes of fragmentation and their rules for different class of organic compounds.

C010: Combined applications of spectroscopic techniques.

COURSE : M.Sc IInd Semester (Theory)

Course Code : CHGT-2.4

Subject: Spectroscopy-II

Course Outcomes	P01	P02	P03	P04	PS01	PS02	PS03	PS04	PS05
C01	3	2	3	1	3	3	3	2	3
C02	1	3	2	2	3	3	3	2	3
C03	3	2	3	3	3	3	3	2	3
C04	1	3	-	2	3	3	3	2	3
C05	2	3	2	1	3	3	3	2	3
C06	1	3	2	2	3	3	3	2	3
C07	-	2	1	3	3	3	3	2	3
C08	2	3	2	3	3	3	3	2	3
C09	2	3	2	2	3	3	3	2	3
C010	1	3	1	3	3	3	3	2	3

M.Sc 3rd Sem: Spectroscopy-III

C01: To study the basic applications of infra red spectroscopy to inorganic compounds.

C02: To know the changes in infrared spectra of donor molecules upon coordination.

C03: To learn about the change in spectra accompanying change in symmetry upon coordination.

C04: To know the detail study of the FTIR.

C05: To learn about basic principle and interaction between spin and magnetic field ESR spectroscopy.

C06: To discuss the various factors affecting for ESR spectroscopy.

C07: To know the detail study of the nuclear quadrupole resonance spectroscopy.

C08: To study the theory, principles and experimental methods of mossbauer spectroscopy.

COURSE : M.Sc IIIrd Semester (Theory)

Course Code : CHGT-3.4

Subject: Spectroscopy-III

Course Outcomes	P01	P02	P03	P04	PS01	PS02	PS03	PS04	PS05
C01	1	3	2	1	3	3	3	2	3
C02	2	3	3	3	3	3	3	2	3
C03	1	2	2	2	3	3	3	2	3
C04	-	2	2	3	3	3	3	2	3
C05	3	3	3	1	3	3	3	2	3
C06	3	1	2	2	3	3	3	2	3
C07	2	2	3	3	3	3	3	2	3
C08	-	1	2	2	3	3	3	2	3

M.Sc IVth Sem: Spectroscopy-IV

C01: To know the detail study of the flame emission spectroscopy.

C02: To understand the basic principle, theory and flame spectra variation of emission intensity with flames, flame background, metallic spectra in flame.

C03: To study the applications of flame emission spectroscopy.

C04: To know the detail study of the chiroptical spectroscopy.

C05: To learn about the plane polarized light, instrumentation and optical rotary dispersion (ORD) of chiroptical spectroscopy.

C06: To determine the configuration of cyclic and steroidal ketones.

C07: To study the theoretical basics for fluorescence and phosphorescence in molecular luminescence spectroscopy.

C08: General scope of applications of luminescence.

C09: To know the detail study of the photoelectron spectroscopy.

C010: To learn about the X-ray photoelectron, Auger electron spectroscopy and applications.

COURSE : M.Sc IVth Semester (Theory)


Course Code : CHGT-4.4

Subject: Spectroscopy-IV

Course Outcomes	P01	P02	P03	P04	PS01	PS02	PS03	PS04	PS05
C01	1	-	3	3	3	3	3	2	3
C02	-	1	2	3	3	3	3	2	3
C03	2	3	1	3	3	3	3	2	3
C04	1	3	2	3	3	3	3	2	3
C05	2	2	2	1	3	3	3	2	3
C06	2	1	1	2	3	3	3	2	3
C07	1	2	3	3	3	3	3	2	3
C08	2	1	2	3	3	3	3	2	3
C09	2	3	1	3	3	3	3	2	3
C010	1	3	2	3	3	3	3	2	3


Co-ordinator,
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IQAC Co-ordinator
S.B.Arts & K.C.P. Science College,
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Principal,
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EVALUATION MAPPING


THEORY:

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

Sl No	Parameter	Percentage (%)
1	Knowledge	10
2	Understanding	15
3	Numericals	05
4	Descriptive	20


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