	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY**		
	First Internal Assessment Jan -2023-24		
	Sem: I	**Sub:** Chemistry **(DSC)**	**Code: 21BSC1C1CHE1L**
Date: 04 – 01– 2024		**Time:** 1:30 PM – 2.30 PM	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	2×3=6
a)	List the three constituent particles of an atom.	
b)	State Heisenberg Uncertainty principle.	
c)	What are Saturated and Unsaturated compounds? Give examples.	
d)	Write any two postulates of Kinetic Theory of gases.	
Q. No. 2	**Answer any Three Questions**	4×3=12
a)	What is Hybridization? Explain types of Hybridization.	
b)	Describe the Rutherford's model of an atom briefly.	
c)	Explain the influence of Hybridization on bond properties.	
d)	Give the relation between critical constants and van der Waals equation.	
Q. No. 3	**Answer any Three Questions**	4×3=12
a)	Define Covalent bond and explain types of Covalent bond	
b)	Derive radius and energy of electron in hydrogen.	
c)	For one mole of a real gas, the van der Waals constant a=0.8dm^6 atm/mol^2 and the critical volume V_c =0.0486dm^3/mol. Calculate it's other critical constants P_c and T_c.	
d)	Explain Andrews isotherm of CO_2.	

	B.L.D.E.A's S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103 DEPARTMENT OF CHEMISTRY		
	First Internal Assessment Jan -2023-24		
	Sem: III	Sub: Chemistry (DSC)	Code: 21BSC3C3CHE3L
Date: 03 – 01– 2024		Time: 4:15 PM – 5.15 PM	Max. Marks: 30

Q. No. 1	**Answer any three Questions**	2×3=6
a)	Define wavelength and frequency with respect to EMR.	
b)	State Radius ratio rules.	
c)	Explain ozonolysis of propene.	
d)	Define Internal Energy.	
Q. No. 2	**Answer any Three Questions**	4×3=12
a)	Derive Beer-Lambert's law.	
b)	Calculate the limiting radius ratio for Coordination number-4.	
c)	Explain Saytzeff and Hofmann elimination with example.	
d)	What is the relationship between C_p and C_v in adiabatic process.	
Q. No. 3	**Answer any Three Questions**	4×3=12
a)	Explain the Construction of Standard Calibration graph..	
b)	Explain the structure of NaCl.	
c)	Explain E1 reaction with mechanism.	
d)	Explain the first law of thermodynamics and it's cases.	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY**		
	First Internal Assessment Jan -2023-24		
	Sem: V	**Sub:** Chemistry **(DSC Paper - 1)**	**Code: 21BSC5CSCHE5L**
Date: 03 – 01– 2024		**Time:** 3:00 PM – 4.00 PM	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	2×3=6
a)	Write the name of the coordination compounds. a)$K_3[Fe(CN)_6]$ & $[Co(NH_3)_6]Cl_3$.	
b)	What is Electromagnetic Radiation? Write it's characters .	
c)	Write any two applications of Phosphazenes.	
d)	Write the nitration reaction of pyridine	
Q. No. 2	**Answer any Three Questions**	4×3=12
a)	Explain the structure & bonding of $[FeF_6]^{3-}$ on the basis of VBT. Comment on its magnetic property.	
b)	Explain Born – Oppenheimer Approximation .	
c)	Explain the synthesis and applications of Silicones.	
d)	Explain the molecular orbital picture and aromaticity of Pyrrole.	
Q. No. 3	**Answer any Three Questions**	4×3=12
a)	Explain Isomerism of Coordination compounds.	
b)	Describe the Potential Energy curve for Bonding and Antibonding molecular obritals.	
c)	Explain the properties, synthesis and applications of LDPE.	
d)	Explain the synthesis of Pyridine by Hantzch .	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY** **First Internal Assessment Jan -2023-24**	
Sem: V	**Sub:** Chemistry **(DSC Paper - 2)**	**Code: 21BSC5CSCHE6L**
Date: 04 – 01– 2024	**Time: 12:00 PM – 1.00 PM**	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a)	Define Calorific value. Write it's units.	
b)	Explain Allylic Bromination using NBS.	
c)	What is cell potential?	
d)	Define Chromophores and Auxochromes . Give examples.	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a)	Describe the manufacture of Water gas.	
b)	Explain the mechanism of formation amide using DCC.	
c)	Explain the reversible and irreversible cells.	
d)	Explain the types of electronic transitions with examples in UV-Visible Spectroscopy.	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a)	Explain the manufacture of Cement by Wet process using Rotary Kiln with neat labeled diagram.	
b)	Explain the reduction of carbonyls using $LiAlH_4$	
c)	Explain the measurement of EMF of a chemical cell by Potentiometer	
d)	Calculate λ_{max} for the following Conjugated Dienes.	

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S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103
DEPARTMENT OF CHEMISTRY

Second Internal Assessment Feb -2023-24

Sem: I	Sub: Chemistry (DSC)	Code: 21BSC1C1CHE1L
Date: 12- 02- 2024	Time: 1:30pm to 2:30pm	Max. Marks: 30

Q. No. 1	**Answer any three Questions**	2×3=6
a)	Give any two validations of Nernst Distribution law.	
b)	State Pauli's exclusion principle.	
c)	Write the difference between Inductive Effect and Electrometric Effect.	
d)	Define LOD and LOQ.	
Q. No. 2	**Answer any Three Questions**	4×3=12
a)	State Nernst Distribution Law and Derive the expression of it.	
b)	Write a note on Quantum numbers.	
c)	Explain Mesomeric effect and Hyper conjugation .	
d)	What is an error? Explain the Determinate and Indeterminate error.	
Q. No. 3	**Answer any Three Questions**	4×3=12
a)	Derive an expression for multiple Extraction in Nernst Distribution Law.	
b)	Give brief account on the variation of atomic radii, effective nuclear charge and ionisation enthalpy down the group and along the period .	
c)	Explain Aromaticity and Anti Aromaticity.	
d)	What are the basic Principles of titrimetric analysis?	

B.L.D.E.A's
S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103
DEPARTMENT OF CHEMISTRY
Second Internal Assessment Feb -2023-24

Sem: III	**Sub:** Chemistry (OEC)	**Code:** 21BSC3O3CHE3
Date: 14– 02– 2024	**Time:** 1:30pm to 2:30pm	**Max. Marks:** 30

Q. No. 1	**Answer any three Questions**	2×3=6
a)	Write the composition of crude petroleum.	
b)	Define clean fuels with an example.	
c)	What is nuclear pollution?	
d)	What do you mean by green house effect and ozone depletion?	
Q. No. 2	**Answer any Three Questions**	4×3=12
a)	Write a note on Refining of Petroleum .	
b)	Explain LPG, CNG and LNG.	
c)	Describe solid and semi solid lubricants .	
d)	Mention the constituents of Photochemical Smog and explain it's Photochemistry.	
Q. No. 3	**Answer any Three Questions**	4×3=12
a)	What is Coal gasification? Explain different types.	
b)	What is Petroleum and Petrochemical industry? Write any two applications of Petroleum products.	
c)	Write a short note on sewage water treatment.	
d)	Explain the properties of Lubricants and their determinatioin.	

B.L.D.E.A's
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DEPARTMENT OF CHEMISTRY

Second Internal Assessment Feb -2023-24

Sem: V P-1	Sub: Chemistry (DSC)	Code: 21BSC5C5CHE5L
Date: 10 – 02– 2024	Time: 3: 00pm to 4:00 pm	Max. Marks: 30

Q. No. 1	**Answer any three Questions**	2×3=6
a)	Calculate Magnetic moment of Mn^{2+} ion by using spin only formula.	
b)	What are Alkaloids? Give example.	
c)	State Hook's Law with mathematical expression.	
d)	Write the Synthesis of Teflon.	
Q. No. 2	**Answer any Three Questions**	4×3=12
a)	Explain the separation of lanthanides by ion exchange method.	
b)	Write the isolation, constitution, and synthesis of Coniine.	
c)	Caclulate the Bond length and Moment of inertia of HCl molecule.	
d)	Write the Properties, Synthesis and Applications of Kelvar.	
Q. No. 3	**Answer any Three Questions**	4×3=12
a)	Why most of the transition metal complexes are colored in nature? Explain.	
b)	Explain the 12 principles of Green chemistry.	
c)	Define Zero point Energy. Explain the determination of Force constant .	
d)	Write the Properties, Synthesis and Applications of Bakelite.	

B.L.D.E.A's

S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103

DEPARTMENT OF CHEMISTRY

Second Internal Assessment Feb -2023-24

Sem : V P-2	Sub: Chemistry (DSC)	Code: 21BSC5C5CHE6L
Date: 12- 02- 2024	Time: 12:00pm to 1:00 pm	Max. Marks: 30

Q. No. 1	**Answer any three Questions**	2×3=6
a)	Define Molecular ion peak and Base peak.	
b)	What is Annealing of Glass?	
c)	What is electrochemical series?	
d)	What are Dyes? Give examples.	
Q. No. 2	**Answer any Three Questions**	4×3=12
a)	Explain the principle of mass spectrometry.	
b)	Describe the manufacture of Alundum and write it's applications.	
c)	Explain the salt bridge. Give it's application.	
d)	Explain the synthesis of Indigo dye.	
Q. No. 3	**Answer any Three Questions**	4×3=12
a)	Explain McLafferty rearrangement of 2-hexanone	
b)	Describe the manufacture of Glass by Tank furnace method.	
c)	Write a short note on Calomel electrode.	
d)	Explain the synthesis of Congo red dye.	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY**		
	First Internal Assessment July -2023-24		
	Sem: II	**Sub:** Chemistry (DSC)	**Code: 21BSC1C1CHE1L**
Date: 10 – 07– 2024		**Time:** 9:30 AM – 10:20 AM	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a)	What is an Ionic bond? Give an example.	
b)	What are the factors that affect the chemical kinetics?	
c)	Define unit cell.	
d)	What are Meso compounds? Give an example	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a)	Explain sp2 hybridization with an example?	
b)	Give the different examples for order of reactions.	
c)	What are the properties of Crystalline solids?	
d)	How to determine the configuration of isomers by Dipole moment method.& Anhydride formation method?	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a)	Explain Born –Haber cycle	
b)	Derive the integrated form of rate equation for zero order reaction.	
c)	Derive the equation of Bragg's law.	
d)	Explain Newmann, Sawhorse, Fischer Projection formulae and their inter conversion with an example.	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY**		
	First Internal Assessment July -2023-24		
	Sem: IV	**Sub:** Chemistry (DSC)	**Code: 21BSC3C3CHE3L**
Date: 11 – 07– 2024		**Time:** 9:30 am – 10:20am	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a.	Explain the stability order for carbanions.	
b.	State Bent's rule.	
c.	Define Chromatography.	
d.	Define Equivalent Conductance and mention its unit.	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a)	Write a note on Pinacol-Pinacolone rearrangement.	
b)	Explain the SP^3-Hybridiziation with suitable example.	
c)	Give the classification of chromatographic technique.	
d)	How to determine the energy of activation of Inversion of Cane Suger in presence of acid (molar HCl at 30°C).	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a)	Explain Perkins reaction with mechanism.	
b)	Explain the structure & bonding of Li_2 molecule on the basis of MOT. Calculate Bond Order & comment on its magnetic Properties.	
c)	Describe the mechanism of Thin Layer Chromatography (TLC).	
d)	How to calculate the transport number by Hittorf's method?	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY** **First Internal Assessment July -2023-24**		
	Sem: VI	**Sub:** Chemistry **(DSC Paper - 1)**	**Code: 21BSC5CSCHE5L**
Date: 09 – 07– 2024		**Time: 01**:40 PM – 02:30 PM	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a.	Define degree of freedom?	
b.	Calculate CFSE for High Spin d^5 Octahedral Complex.	
c.	Draw the Howorth structure of glucose and fructose .	
d.	Define Coupling constant.	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a.	Write the clausius clapeyorn equation and explain its applications.	
b.	Explain the Jahn Teller distortion in Octahedal complex.	
c.	Illustrate with an example the step of Ruff degradation	
d.	Explain the PMR spectra of i). Ethanol ii). Ethyl Bromide.	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a.	Explain the phase diagram for one component system-water	
b.	Explain the splitting of d-orbitals in square planar complexes.	
c.	Write a short note on conversion of fructose and glucose	
d.	Explain the NMR spectra instrumentation and give any two applications.	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY**		
	First Internal Assessment July -2023-24		
	Sem: VI	**Sub:** Chemistry **(DSC Paper - 2)**	**Code: 21BSC5CSCHE61**
Date: 12 – 07– 2024		**Time: 01:40 PM – 02:30 PM**	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a)	State Fries rearrangement.	
b)	What are Solvolysis reactions? Give an example.	
c)	Define Steric factor.	
d)	Write the structure of chloropheniramine maleate and two uses	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a)	Explain Backmann rearrangement with mechanism.	
b)	Explain the reactions studied in liquid ammonia.	
c)	Evaluate the rate constant for an unimolecular reaction (Lindemann's theory) on the basis of collision theory.	
d)	Write the synthesis of pentothal sodium and its uses	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a)	Explain Benzidine rearrangement with mechanism.	
b)	Describe the Structure and Function of Haemoglobin.	
c)	On the basis of transition state theory derive an expression for the rate constant of a reaction.	
d)	Explain the Bendicts reagents	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY**		
	First Internal Assessment July -2023-24		
	Sem: II	**Sub:** Chemistry (DSC)	**Code: 21BSC1C1CHE1L**
Date: 10 – 07– 2024		**Time:** 9:30 AM – 10:20 AM	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a)	What is an Ionic bond? Give an example.	
b)	What are the factors that affect the chemical kinetics?	
c)	Define unit cell.	
d)	What are Meso compounds? Give an example	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a)	Explain sp2 hybridization with an example?	
b)	Give the different examples for order of reactions.	
c)	What are the properties of Crystalline solids?	
d)	How to determine the configuration of isomers by Dipole moment method.& Anhydride formation method?	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a)	Explain Born –Haber cycle	
b)	Derive the integrated form of rate equation for zero order reaction.	
c)	Derive the equation of Bragg's law.	
d)	Explain Newmann, Sawhorse, Fischer Projection formulae and their inter conversion with an example.	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY**		
	First Internal Assessment July -2023-24		
	Sem: IV	**Sub:** Chemistry (DSC)	**Code: 21BSC3C3CHE3L**
Date: 11 – 07– 2024		**Time:** 9:30 am – 10:20am	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a.	Explain the stability order for carbanions.	
b.	State Bent's rule.	
c.	Define Chromatography.	
d.	Define Equivalent Conductance and mention its unit.	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a)	Write a note on Pinacol-Pinacolone rearrangement.	
b)	Explain the SP^3-Hybridiziation with suitable example.	
c)	Give the classification of chromatographic technique.	
d)	How to determine the energy of activation of Inversion of Cane Suger in presence of acid (molar HCl at 30°C).	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a)	Explain Perkins reaction with mechanism.	
b)	Explain the structure & bonding of Li_2 molecule on the basis of MOT. Calculate Bond Order & comment on its magnetic Properties.	
c)	Describe the mechanism of Thin Layer Chromatography (TLC).	
d)	How to calculate the transport number by Hittorf's method?	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY**		
	First Internal Assessment July -2023-24		
	Sem: VI	**Sub: Chemistry (DSC Paper - 2)**	**Code: 21BSC5CSCHE6L**
Date: 12 – 07– 2024		**Time: 01:40 PM – 02:30 PM**	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a)	State Fries rearrangement.	
b)	What are Solvolysis reactions? Give an example.	
c)	Define Steric factor.	
d)	Write the structure of chloropheniramine maleate and two uses	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a)	Explain Backmann rearrangement with mechanism.	
b)	Explain the reactions studied in liquid ammonia.	
c)	Evaluate the rate constant for an unimolecular reaction (Lindemann's theory) on the basis of collision theory.	
d)	Write the synthesis of pentothal sodium and its uses	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a)	Explain Benzidine rearrangement with mechanism.	
b)	Describe the Structure and Function of Haemoglobin.	
c)	On the basis of transition state theory derive an expression for the rate constant of a reaction.	
d)	Explain the Bendicts reagents	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY**		
	First Internal Assessment July -2023-24		
	Sem: VI	**Sub: Chemistry (DSC Paper - 1)**	**Code: 21BSC5CSCHE5L**
Date: 09 – 07– 2024		**Time: 01:40 PM – 02:30 PM**	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a.	Define degree of freedom?	
b.	Calculate CFSE for High Spin d^5 Octahedral Complex.	
c.	Draw the Howorth structure of glucose and fructose .	
d.	Define Coupling constant.	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a.	Write the clausius clapeyorn equation and explain its applications.	
b.	Explain the Jahn Teller distortion in Octahedal complex.	
c.	Illustrate with an example the step of Ruff degradation	
d.	Explain the PMR spectra of i). Ethanol ii). Ethyl Bromide.	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a.	Explain the phase diagram for one component system-water	
b.	Explain the splitting of d-orbitals in square planar complexes.	
c.	Write a short note on conversion of fructose and glucose	
d.	Explain the NMR spectra instrumentation and give any two applications.	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY**		
	First Internal Assessment July -2023-24		
	Sem: II	**Sub:** Chemistry (DSC)	**Code: 21BSC1C1CHE1L**
Date: 10 – 07– 2024		**Time:** 9:30 AM – 10:20 AM	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a)	What is an Ionic bond? Give an example.	
b)	What are the factors that affect the chemical kinetics?	
c)	Define unit cell.	
d)	What are Meso compounds? Give an example	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a)	Explain sp2 hybridization with an example?	
b)	Give the different examples for order of reactions.	
c)	What are the properties of Crystalline solids?	
d)	How to determine the configuration of isomers by Dipole moment method.& Anhydride formation method?	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a)	Explain Born –Haber cycle	
b)	Derive the integrated form of rate equation for zero order reaction.	
c)	Derive the equation of Bragg's law.	
d)	Explain Newmann, Sawhorse, Fischer Projection formulae and their inter conversion with an example.	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY**		
	First Internal Assessment July -2023-24		
	Sem: IV	**Sub:** Chemistry (DSC)	**Code: 21BSC3C3CHE3L**
Date: 11 – 07– 2024		**Time:** 9:30 am – 10:20am	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a.	Explain the stability order for carbanions.	
b.	State Bent's rule.	
c.	Define Chromatography.	
d.	Define Equivalent Conductance and mention its unit.	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a)	Write a note on Pinacol-Pinacolone rearrangement.	
b)	Explain the SP^3-Hybridiziation with suitable example.	
c)	Give the classification of chromatographic technique.	
d)	How to determine the energy of activation of Inversion of Cane Suger in presence of acid (molar HCl at 30°C).	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a)	Explain Perkins reaction with mechanism.	
b)	Explain the structure & bonding of Li_2 molecule on the basis of MOT. Calculate Bond Order & comment on its magnetic Properties.	
c)	Describe the mechanism of Thin Layer Chromatography (TLC).	
d)	How to calculate the transport number by Hittorf's method?	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY** **First Internal Assessment July -2023-24**		
	Sem: VI	**Sub:** Chemistry **(DSC Paper - 1)**	**Code: 21BSC5CSCHE5L**
Date: 09 – 07– 2024		**Time: 01**:40 PM – 02:30 PM	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a.	Define degree of freedom?	
b.	Calculate CFSE for High Spin d^5 Octahedral Complex.	
c.	Draw the Howorth structure of glucose and fructose .	
d.	Define Coupling constant.	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a.	Write the clausius clapeyorn equation and explain its applications.	
b.	Explain the Jahn Teller distortion in Octahedal complex.	
c.	Illustrate with an example the step of Ruff degradation	
d.	Explain the PMR spectra of i). Ethanol ii). Ethyl Bromide.	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a.	Explain the phase diagram for one component system-water	
b.	Explain the splitting of d-orbitals in square planar complexes.	
c.	Write a short note on conversion of fructose and glucose	
d.	Explain the NMR spectra instrumentation and give any two applications.	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY**		
	First Internal Assessment July -2023-24		
	Sem: VI	**Sub:** Chemistry **(DSC Paper - 2)**	**Code: 21BSC5CSCHE61**
Date: 12 – 07– 2024		**Time: 01:40 PM – 02:30 PM**	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a)	State Fries rearrangement.	
b)	What are Solvolysis reactions? Give an example.	
c)	Define Steric factor.	
d)	Write the structure of chloropheniramine maleate and two uses	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a)	Explain Backmann rearrangement with mechanism.	
b)	Explain the reactions studied in liquid ammonia.	
c)	Evaluate the rate constant for an unimolecular reaction (Lindemann's theory) on the basis of collision theory.	
d)	Write the synthesis of pentothal sodium and its uses	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a)	Explain Benzidine rearrangement with mechanism.	
b)	Describe the Structure and Function of Haemoglobin.	
c)	On the basis of transition state theory derive an expression for the rate constant of a reaction.	
d)	Explain the Bendicts reagents	

	B.L.D.E.A's **S.B. ARTS AND K.C.P. SCIENCE COLLEGE VIJAYAPUR-586103** **DEPARTMENT OF CHEMISTRY**		
	First Internal Assessment July -2023-24		
	Sem: II	**Sub:** Chemistry (DSC)	**Code: 21BSC1C1CHE1L**
Date: 10 – 07– 2024		**Time:** 9:30 AM – 10:20 AM	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a)	What is an Ionic bond? Give an example.	
b)	What are the factors that affect the chemical kinetics?	
c)	Define unit cell.	
d)	What are Meso compounds? Give an example	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a)	Explain sp2 hybridization with an example?	
b)	Give the different examples for order of reactions.	
c)	What are the properties of Crystalline solids?	
d)	How to determine the configuration of isomers by Dipole moment method.& Anhydride formation method?	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a)	Explain Born –Haber cycle	
b)	Derive the integrated form of rate equation for zero order reaction.	
c)	Derive the equation of Bragg's law.	
d)	Explain Newmann, Sawhorse, Fischer Projection formulae and their inter conversion with an example.	

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	First Internal Assessment July -2023-24		
	Sem: IV	**Sub:** Chemistry (DSC)	**Code: 21BSC3C3CHE3L**
Date: 11 – 07– 2024		**Time:** 9:30 am – 10:20am	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a.	Explain the stability order for carbanions.	
b.	State Bent's rule.	
c.	Define Chromatography.	
d.	Define Equivalent Conductance and mention its unit.	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a)	Write a note on Pinacol-Pinacolone rearrangement.	
b)	Explain the SP^3-Hybridiziation with suitable example.	
c)	Give the classification of chromatographic technique.	
d)	How to determine the energy of activation of Inversion of Cane Suger in presence of acid (molar HCl at 30°C).	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a)	Explain Perkins reaction with mechanism.	
b)	Explain the structure & bonding of Li_2 molecule on the basis of MOT. Calculate Bond Order & comment on its magnetic Properties.	
c)	Describe the mechanism of Thin Layer Chromatography (TLC).	
d)	How to calculate the transport number by Hittorf's method?	

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	First Internal Assessment July -2023-24		
	Sem: VI	**Sub: Chemistry (DSC Paper - 2)**	**Code: 21BSC5CSCHE6L**
Date: 12 – 07– 2024		**Time: 01:40 PM – 02:30 PM**	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a)	State Fries rearrangement.	
b)	What are Solvolysis reactions? Give an example.	
c)	Define Steric factor.	
d)	Write the structure of chloropheniramine maleate and two uses	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a)	Explain Backmann rearrangement with mechanism.	
b)	Explain the reactions studied in liquid ammonia.	
c)	Evaluate the rate constant for an unimolecular reaction (Lindemann's theory) on the basis of collision theory.	
d)	Write the synthesis of pentothal sodium and its uses	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a)	Explain Benzidine rearrangement with mechanism.	
b)	Describe the Structure and Function of Haemoglobin.	
c)	On the basis of transition state theory derive an expression for the rate constant of a reaction.	
d)	Explain the Bendicts reagents	

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	First Internal Assessment July -2023-24		
	Sem: VI	**Sub: Chemistry (DSC Paper - 1)**	**Code: 21BSC5CSCHE5L**
Date: 09 – 07– 2024		**Time: 01:40 PM – 02:30 PM**	**Max. Marks: 30**

Q. No. 1	**Answer any three Questions**	**2×3=6**
a.	Define degree of freedom?	
b.	Calculate CFSE for High Spin d^5 Octahedral Complex.	
c.	Draw the Howorth structure of glucose and fructose .	
d.	Define Coupling constant.	
Q. No. 2	**Answer any Three Questions**	**4×3=12**
a.	Write the clausius clapeyorn equation and explain its applications.	
b.	Explain the Jahn Teller distortion in Octahedal complex.	
c.	Illustrate with an example the step of Ruff degradation	
d.	Explain the PMR spectra of i). Ethanol ii). Ethyl Bromide.	
Q. No. 3	**Answer any Three Questions**	**4×3=12**
a.	Explain the phase diagram for one component system-water	
b.	Explain the splitting of d-orbitals in square planar complexes.	
c.	Write a short note on conversion of fructose and glucose	
d.	Explain the NMR spectra instrumentation and give any two applications.	