Lesson Plan

Name of College: G C Badli, Jhajjar
Academic Sessio 2021-22
Name of Asstt./Ass. Prof.: Dr. Ravinder Singh
Class: B.Sc. - 2nd Sem
Name of Subject: Organic Chemistry

21March 2022 to -20June2022	
	Month (March -April)
27 March	**SUNDAY**
Week 2 (28Mar-2April)	Alkenes Nomenclatu re of alkenes, , mechanisms of dehydration of alcohols
3 April	**SUNDAY**
Week 3 (4April-9April)	dehydrohalogenation of alkyl halides,. . The Saytzeff rule, Hofmann elimination physical p roperties and relative stabilities of alkenes. Chemical reactions of alkenes
10 April	**SUNDAY**
Week 4 (11April-16April)	. mechanisms involved in hydrogenation, electrophilic and free radical additions, Markownikoff's rule, hydroboration–oxidation, oxymercurationreduction, ozonolysis, hydration, hydroxylation and oxidation with KMnO4
17th April	**SUNDAY**
Week 5 (18April-23April)	.Arenes and Aromaticity Nomenclatu re of benzene deriva tives:. Aromatic nucleus and side chain. Aromaticity: the Huckel rule, aromatic ions, annulenes up to 10 carbon atoms
	Month (April- May)
24 April	**SUNDAY**
Week 6 25April-30April	aromatic, anti - aromatic and non – aromatic compounds. Aromatic electrophilic substitution general pattern of the mechanism, mechansim of nitration, halogenation, sulphonation, a Friedel-Crafts reaction. Energy profile diagrams. Activating , deactivating subs tituents and orientation.
1May	**SUNDAY**
Week 7 (2May-7May)	. Dienes and Alkynes Nomenclature and classification of dienes: isolated, conjugated and cumulated dienes. Structure of butadiene,. Chemical reactions 1,2 and 1,4 additions (Electrophilic & free radical mechanism), Diels-Alder reaction,
8 May	**SUNDAY**
Week 8 9May- 14May	Nomenclature, structure and bonding in alkynes. Methods of formation. Chemical reactions of alkynes, acidity of alkynes. Mechanism of electrophilic and nucleophilic addition reactions, hydroboration-oxidation of alkyne
15May	**SUNDAY**
Week 9 16May-21May	Alkyl and Aryl Halides Nomenclatu re and classes of alkyl halides, methods of formation, chemical reactions. Mechanisms
	Month (May-June)
22 May	**SUNDAY**
Week 10 23 May-28May	stereochemistry of nucleophilic substitution reactions of alkyl halides , SN2 and SN1reactions with energy profile diagrams.Methods of formation and reactions of aryl halides,

Name of Subject: ORGANIC CHEMISTRY

29th May	**SUNDAY**
Week 11 **30May–4 June**	The additionelimination and the elimination-addition mechanisms of nucleophilic aromatic substitution reactions
5June	**SUNDAY**
Week 12 **6June – 11 June**	Relative reactivities of alkyl halides vs allyl, vinyl and aryl halides
12June	**SUNDAY**
Week 13 **13 June– 18 June**	Revision and Test
19June	**SUNDAY**
Month (June))	
Week 14	Assignment

Lesson Plan

Name of College: Govt. College Badli, Jhajjar
Academic Session 2021-22
Name of Asstt./Ass. Prof.: Dr. Ravinder Singh
Class: B.Sc. 4th sem.
Name of Subject: Physical chemistry

01st April 2022 to -27th June 2022	
Month (March -April)	
Week 1 01st April – 02th April	Thermodynamics-III Second law of thermodynamics, need for the law, different statements of the law, Carnot's cycles and its efficiency
3 April	SUNDAY
Week 2 (4April-9April)	Thermodynamics scale of temperature. Concept of entropy – entropy as a state function, entropy as a function of V & T,
10 April	SUNDAY
Week 3 (11April-16April)	entropy as a function of P & T, entropy change in physica l change, entropy as a criteria of spontaneity and equilibrium.
17th April	SUNDAY
Week 4 (18April-23April)	. Entropy change in ideal gases and mixing of gases.
24th April	SUNDAY
Week 5 25April-30April	Thermodynamics-IV Third law of thermodynamics: Nernst heat theorem, statement of concept of residual entropy
Month (April- May)	
1May	SUNDAY
Week 6 (2May-7May)	evaluation of absolute entropy from heat capacity data. Gibbs and Helmholtz functions;
8 May	SUNDAY
Week 7 9May-14May	Gibbs function (G) and Helmholtz function (A) as thermodynamic quantities, A & G as criteria for thermodynamic equilibrium and spontaneity, their advantage over entropy change.
15May	SUNDAY
Week 8 16May-21May	Variation of G and A with P, V and T.
22 May	SUNDAY

Lesson Plan

Name of College:
Academic Session 2021-2
Name of Asstt./Ass. Prof.:
Class: B.Sc.
Name of Subject:

Week 9 23 May-28May	Electrochemistry-III Electrolytic and Galvanic cells – reversible & Irreversible cells , conventional representation of electrochemical cells. EMF of cell and its measurement, Wes ton standard cell, activity and activity coefficients.
29th May	SUNDAY
Week 10 30May–4 June	Calculation of thermodynamic quantities of cell reaction (G, H & K). Types of reversible electrodes – metal- metal ion gas electrode, metal –insoluble salt- anion and redox electrodes.
5June	SUNDAY
Week 11 6June – 11June	Electrodereactions, Nernst equations, derivation of cell EMF and single electrode potential. Standard Hydrogen electrode, reference electrodes, standard electrodes potential, sign conventions, electrochemical se ries and its applications.
12June	SUNDAY
Week 12 13 June– 18 June	Electrochemistry-IV Concentration cells with and without transference, liquid junction potential, application of EMF measurement
19June	SUNDAY
Week 13 20th June – 25th June	potentiometric titration (acid- base and redox). Determination of pH using Hydrogen electrode, Quinhydrone electrode and glass electrode by potentiometric methods.
26th June	SUNDAY
Month (June))	
Week 14 27th June	Assignment 1,2,3

Govt. College Badli, Jhajjar

Academic Session 2021-22
Name of Asstt./Ass. Prof – Dr Ravinder Singh
Class: – B.Sc 6th Sem.
Name of Subject: – Organic Chemistry

Week 2 (28Mar-2April)	Heterocyclic Compounds-I Introduction: Molecular orbital p icture and aromatic characteristics of pyrrole,.
3 April	SUNDAY
Week 3 (4April -9April)	Introduction: Molecular orbital p icture and aromatic characteristics of furan,
10 April	SUNDAY
Week 4 (11April-16April)	Introduction: Molecular orbital p icture and aromatic characteristics of thiophene
17th April	SUNDAY
Week 5 (18April-23April)	Introduction: Molecular orbital p icture and aromatic characteristics of pyridine
24 April	SUNDAY
Week 6 25April-30April	Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution pyrrole,
1May	SUNDAY
Week 7 (2May-7May)	Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution furan
8 May	SUNDAY
Week 8 9May- 14May	Methods of synthesis and chemical reactions with particular emphasis on the mechanism of electrophilic substitution thophene
15May	SUNDAY

Week 9 16May- 21May	Mechanism of nucleophilic substitution reactions in pyridine derivatives.
22 May	SUNDAY
Week 10 23 May-28May	Comparison of basicity of pyridine, piperidine and pyrrole
29th May	SUNDAY
Week 11 30May–4 June	Heterocyclic Compounds-II Introduction to condensed five and six-membered heterocycles Mechanism of electrophilic substitution reactions of, quinoline and isoquinoline
5June	SUNDAY
Week 12 6June – 11 June	Prepration and reactions of indole, quinoline and isoquinoline with special reference to Fisher indole synthesis, . Organosulphur Compounds Nomenclature, structural features
12June	SUNDAY
Week 13 13 June– 18 June	Prepration and reactions of indole, quinoline and isoquinoline with special reference to Skraup synthesis Prepration and reactions of indole, quinoline and isoquinoline with special reference to, Skraup synthesis
19June	SUNDAY