

I – Academic Planner

A. Teaching Plan (Year : Aug-Dec 2020-2021 Semester: August- December) Odd semester

Teacher's Name : Dr. Shashwat Malhotra Department : Chemistry

S. No.	UPC	Paper Name	Core/A ECC/G E/SEC	Topic/Unit	Start Date	EndDate
1.	32177 908	BSc (H) Chemistry III yr (Theory) Paper Name: Green chemistry	DSE	1. Introduction to Green Chemistry	12/08/202 0	03/09/20 20
				2. Principles of Green Chemistry and designing a Chemical synthesis	09/09/202 0	14/10/20 20
				3. Future Trends in Green Chemistry	21/10/202 0	28/11/20 20
2.	32173 910	BSc (H) Chemistry II yr (Theory) Paper Name: Chemistry of Cosmetics and perfumes (SEC)	SEC	A general study including preparation and uses of the following:		
				1. Hair dye, hair spray, shampoo, suntan lotions, face powder, lipsticks, talcum powder, nail enamel,	11/08/202 0	20/10/20 20
				2. Creams (cold, vanishing and shaving creams), antiperspirants and artificial flavours.	27/10/202 0	24/11/20 20
3.	32177 908	BSc (H) Chemistry III yr (Practical) Paper Name: Green chemistry	Core	1. Mechanochemical solvent free synthesis of azomethine	12/08/202 0	19/08/20 20
				2. Preparation and characterization of biodiesel from vegetable oil	26/08/202 0	02/09/20 20
				3. Benzoin condensation using green methods		16.09. 2020
				4. Photoreduction of benzophenone	09.09. 2020	
				5. Extraction of D-limonene from orange peel using liquid CO ₂ prepared from dry ice	23.09. 2020	30.09. 2020
				6. Preparation and characterization of nano particles of gold using tea leaves.	07.10. 2020	
				7. Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper (II).	21.10. 2020	14.10. 2020
	04.11. 2020	28.10. 2020				
	18.11. 2020	11.11. 2020				

				8. Viva-voce Preparation		25.11.2020
4.	32171302	BSc (H) Chemistry II yr (Practical) Paper Name: Oxygen Containing Functional Groups	Core	1.Functional group tests for alcohols, phenols, carbonyl and carboxylic acid group 2.Organic preparations	11.08.2020 15.09.2020	08.09.2020 24.11.2020
5.	42171103	BSc (Prog.) Physical Sciences I yr (Practical) Paper Name: Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons	Core	Section A: Inorganic Chemistry - Volumetric Analysis 1. Estimation of oxalic acid by titrating it with KMnO ₄ . 2. Estimation of Mohr's salt by titrating it with KMnO ₄ . 3. Estimation of water of crystallization in Mohr's salt by titrating with KMnO ₄ . 4. Estimation of Fe (II) ions by titrating it with K ₂ Cr ₂ O ₇ using internal indicator. 5. Estimation of Cu (II) ions iodometrically using Na ₂ S ₂ O ₃ . Section B: Organic Chemistry 1. Purification of organic compound by crystallisation (from water and alcohol) and distillation. 2. Criteria of purity: Determination of M.P./B.P. 3. Separation of mixtures by chromatography: Identify and separate the components of a given mixture of 2 amino acids (glycine, aspartic acid, glutamic acid, tyrosine or any other amino acid) by radial/ascending paper chromatography.	14/08/2020 23/08/2020 11.09.2020 25.09.2020 09.10.2020 23.10.2020 06.11.2020 20.11.2020	21/08/2020 04/09/2020 18.09.2020 02.10.2020 16.10.2020 30.10.2020 13.11.2020 27.11.2020

6.	BSc (Prog.) Physical Sciences IIIrd yr (Practical) Paper Name: Basic Analytical Chemistry	SEC	1. Paper chromatographic separation of mixture of metal ion (Ni ²⁺ and Co ²⁺) 2. Determination of dissolved oxygen (DO) of a water sample 3. Determination of pH, acidity and alkalinity of a water sample 4. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration. 5. Determination of pH of soil samples. 6. Spectrophotometric identification and determination of caffeine and benzoic acid in soft drink	15/08/2020 0 05/09/2020 0 19.09. 2020 03.10. 2020 24.10. 2020 14.11. 2020	29/08/2020 12/09/2020 26.09. 2020 17.10. 2020 07.11. 2020 28.11. 2020
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B. FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Teachers

Event Topic	NA				
Type / Nature (FDP/Webinar/Workshop etc.)	NA				
Organizing In-charge	NA				
Details regarding invited Resource Person	---				
Nature of Participation (e.g. Invited Speaker, Participant etc.)	NA				
Date/s	NA	Timing/s	NA	Mode	NA

C. Internal Assessment: House Exam (Test/Presentation etc.)&Assignment*

Course Code	Course Name	Unique Paper Code	Topic Name	Day and Date	Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining
CBCS	BSc (H) Chemistry III yr	32177908	Introduction to Green Chemistry	Thursday, 19/11/2020	26/11/2020

			Principles of Green Chemistry and Designing a Chemical synthesis Examples of Green Synthesis/ Reactions and some real world cases		
CBCS	BSc (H) Chemistry II yr	32173910	Hair dye, hair spray, shampoo, suntan lotions, face powder, lipsticks, talcum powder, nail enamel.	Monday, 17/11/2020	24/11/2020

***Marks of the Internal Assessment to be submitted to the College 15 days before the last working day of every semester**

D. Organization of Department/College Society Meetings by Staff Advisor/Convener

Department/Society	Meeting Date	Purpose

E. College Functions

College Function	Function Date	Role to be played
1. Standing committee of college (Admission committee)	12.10.2020	Taking care of the 1 st yr admissions for the students.

I – Academic Planner

B. Teaching Plan (Year : Jan-June/August 2020-2021 Semester: Even)

Teacher's Name: Dr. Shashwat Malhotra Department: Chemistry

S. No.	UPC	Paper Name	Core/AE CC/GE/SEC	Topic/Unit	Start Date	End Date
1.	3217120 1	BSc (H) Chemistry I yr (Theory) Paper Code: Organic chemistry-I	Core	Recapitulation of basics of Organic Chemistry	07/04/202 1	11/08/2021
2.	3217391 0	BSc (H) Chemistry II yr (Theory) Paper Name: Chemistry of Cosmetics and perfumes (SEC)	Core	A general study including preparation and uses of the following: 1. Hair dye, hair spray, shampoo, suntan lotions, face powder, lipsticks, talcum powder, nail enamel. 2. Creams (cold, vanishing and shaving creams), antiperspirants and artificial flavours.	06/01/202 1 17/03/202 1	10/03/2021 19/05/2021
3.	4217120 5	BSc (Prog.) Physical Sciences I yr (Theory) Paper Code: Core Chemistry II (Chemical energetic, chemical equilibrium and functional group organic chemistry)	Core	1. Aromatic Hydrocarbons 2. Alcohols, Phenols, Ethers, Aldehydes and Ketones (Aliphatic and Aromatic) 3. Ethers (Aliphatic & Aromatic) 4. Aldehydes and ketones (Aliphatic and Aromatic)	05/04/202 1 03/05/202 1 07/06/202 1 05/07/202 1	26/01/2021 31/05/2021 28/06/2021 11/08/2021
4.	4217392 2	BSc (Prog.) Physical Sciences, III yr (Theory) Analytical clinical biochemistry	Core	1. Metabolism 2. Enzymes 3. Lipids & Nucleic Acids 4. Blood and Urine	02/01/202 1 06/02/202 1 06/03/202 1	30/01/2021 27/02/2021 27/03/2021 22/05/2021

					03/04/2021	
5.	3217120 1	BSc (H) Chemistry I yr (Practical) Paper Code: Organic chemistry-I	Core	1. Checking the calibration of the thermometer 2. Purification of organic compounds by crystallization using the following solvents: 3. Determination of the melting points of unknown organic compounds (Kjeldahl method and electrically heated melting point apparatus) 4. Effect of impurities on the melting point – mixed melting point of two unknown organic compounds 5. Determination of boiling point of liquid compounds. (boiling point lower than and more than 100 °C by distillation and capillary method) 6. Chromatography (a) Ascending (b) Circular 7. Detection of extra elements 8. Organic Preparations (i) Bromination of acetanilide / aniline / phenol (ii) Nitration of nitrobenzene / toluene.	01/04/2021 15/04/2021 29/04/2021 13/05/2021 27/05/2021 10/06/2021 24/06/2021 08/07/2021 22/07/2021	08/04/2021 22/04/2021 06/05/2021 20/05/2021 03/06/2021 17/06/2021 01/07/2021 15/07/2021 29/07/2021
6.	3217160 2	BSc (H) Chemistry III yr (Practical) Paper Code: Organic Chemistry V	Core	1. Identification of simple organic compounds by IR spectroscopy and NMR spectroscopy (Spectra to be provided) 2. Preparation of methyl orange 3. Preparation of urea formaldehyde resin 4. Extraction of caffeine from tea leaves. 5. Qualitative analysis of unknown organic compounds containing monofunctional groups	01/04/2021 29/04/2021 13/05/2021 27/05/2021 10/06/2021	22/04/2021 06/05/2021 20/05/2021 03/06/2021 29/07/2021
7.	4217120 5	BSc (Prog.) Life Sciences I yr	Core	Section A: Physical Chemistry	02/04/2021 1	23/04/2021

	(Practical) Paper Code: Core Chemistry II (Chemical energetic, chemical equilibrium and functional group organic chemistry)	<p>Energetics:</p> <ol style="list-style-type: none"> 1. Determination of heat capacity of calorimeter. 2. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide. 3. Determination of integral enthalpy of solution of salts (KNO₃, NH₄Cl). 4. Determination of enthalpy of hydration of copper sulphate. 5. Preparation of buffer solutions: (i) Sodium acetate-acetic acid or (ii) Ammonium chloride-ammonium acetate. Measurement of the pH of buffer solutions and comparison of the values with theoretical values. <p>Section B: Organic Chemistry</p> <p>Preparations: (Mechanism of various reactions involved to be discussed) (Recrystallization, determination of melting point and calculation of quantitative yields to be done in all cases)</p> <ol style="list-style-type: none"> 6. Bromination of phenol/aniline 7. Benzoylation of amines/phenols 8. Oxime of aldehydes and ketones 9. 2,4-dinitrophenylhydrazone of aldehydes and ketones 10. Semicarbazone of aldehydes and ketones 11. Viva voce 	<p>30/04/2021 1</p> <p>14/05/2021 1</p> <p>28/05/2021 1</p> <p>11/06/2021 1</p>	<p>07/05/2021</p> <p>21/05/2021</p> <p>04/06/2021</p> <p>30/07/2021</p>
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F. FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Teachers

Not applicable

Event Topic					
Type / Nature (FDP/Webinar/Workshop etc.)					
Organizing In-charge					
Details regarding invited Resource Person		---			
Nature of Participation (e.g. Invited Speaker, Participant etc.)					
Date/s	10 & 11 January, 2020	Timing/s		Mode	

G. Internal Assessment: House Exam (Test/Presentation etc.)&Assignment*

Course Code	Course Name	Unique Paper Code	Topic Name	Day and Date	Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retaining
CBCS	BSc (H) Chemistry I yr (Theory) Paper Code: Organic chemistry-I	32171201	Recapitulation of basics of Organic Chemistry	21/07/2021	28/07/2021
CBCS	BSc (H) Chemistry II yr (Theory) Paper Name: Chemistry of Cosmetics and perfumes (SEC)	32173910	A general study including preparation and uses of the following: 1. Hair dye, hair spray, shampoo, suntan lotions, face powder, lipsticks, talcum powder, nail enamel. 2. Creams (cold, vanishing and shaving creams), antiperspirants and artificial flavours.	21/04/2021	28/04/2021
CBCS	BSc (Prog.) Physical Sciences I yr	42171205	1. Aromatic Hydrocarbons		26/07/2021

	(Theory) Paper Code: Core Chemistry II (Chemical energetic, chemical equilibrium and functional group organic chemistry)		2. Alcohols, Phenols, Ethers, Aldehydes and Ketones (Aliphatic and Aromatic) 3. Ethers (Aliphatic & Aromatic) 4. Aldehydes and ketones (Aliphatic and Aromatic)	19/07/2021	
CBCS	BSc (Prog.) Physical Sciences, III yr (Theory) Analytical clinical biochemistr y	42173922	1. Metabolism 2. Enzymes 3. Lipids & Nucleic Acids	24/04/2021	01/05/2021

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H. Organization of Department/College Society Meetings by Staff Advisor/Convener

Department/Society	Meeting Date	Purpose

I. College Functions

College Function	Function Date	Role to be played

I – Academic Planner

C. Teaching Plan (Year : July-Dec 2021-2022 Semester: Odd)

Teacher's Name: Dr. Shashwat Malhotra Department: Chemistry

S. No.	UPC	Paper Name	Core/A ECC/G E/SEC	Topic/Unit	Start Date	EndDate
1.	32177908	BSc (H) Chemistry III yr (Theory) Paper Name: Green chemistry	DSE	1. Introduction to Green Chemistry 2. Principles of Green Chemistry and designing a Chemical synthesis 3. Future Trends in Green Chemistry	20/07/2021 31/08/2021 21/10/2021	24/08/2021 14/10/2021 16/11/2021
2.	32173910	BSc (H) Chemistry II yr (Theory) Paper Name: Chemistry of Cosmetics and perfumes (SEC)	SEC	A general study including preparation and uses of the following: 1. Hair dye, hair spray, shampoo, suntan lotions, face powder, lipsticks, talcum powder, nail enamel, 2. Creams (cold, vanishing and shaving creams), antiperspirants and artificial flavours.	20/07/2021 18/10/2021	12/10/2021 16/11/2021
3.	32177908	BSc (H) Chemistry III yr (Practical) Paper Name: Green chemistry	Core	1.Mechanochemical solvent free synthesis of azomethine 2.Preparation and characterization of biodiesel from vegetable oil 3. Benzoin condensation using green methods 4. Photoreduction of benzophenone 5.Extraction of D- limonene from orange peel using liquid CO ₂ prepared from dry ice 6. Preparation and characterization of nano particles of gold using tea leaves. 7. Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper (II).	21/07/2021 04/08/2021 18.08. 2021 01.09. 2021 15.09. 2021 29.09. 2021 13.10. 2021 27.10. 2021 03.11. 2021	28/07/2021 11/08/2021 25.08. 2021 08.09. 2021 22.09. 2021 06.10. 2021 20.10. 2021 27.10. 2021 10.11. 2021
4.	32171302	BSc (H) Chemistry II yr	Core	1. Organic preparations 2. Functional group tests for alcohols, phenols,	21.07.2021	13.10.2021

		(Practical) Paper Name: Oxygen Containing Functional Groups		carbonyl and carboxylic acid group	20.10.2021	10.11.2021
5.	42171103	BSc (Prog.) Physical Sciences I yr (Practical) Paper Name: Atomic Structure, Bonding, General Organic Chemistry & Aliphatic Hydrocarbons	Core	Section A: Inorganic Chemistry - Volumetric Analysis 1. Estimation of oxalic acid by titrating it with KMnO ₄ . 2. Estimation of Mohr's salt by titrating it with KMnO ₄ . 3. Estimation of water of crystallization in Mohr's salt by titrating with KMnO ₄ . 4. Estimation of Fe (II) ions by titrating it with K ₂ Cr ₂ O ₇ using internal indicator. 5. Estimation of Cu (II) ions iodometrically using Na ₂ S ₂ O ₃ . Section B: Organic Chemistry 1. Purification of organic compound by crystallisation (from water and alcohol) and distillation. 2. Criteria of purity: Determination of M.P./B.P. 3. Separation of mixtures by chromatography: Identify and separate the components of a given mixture of 2 amino acids (glycine, aspartic acid, glutamic acid, tyrosine or any other amino acid) by radial/ascending paper chromatography.	19/11/2021	26/11/2021
					03/12/2021	10/12/2021
					17.12. 2021	24.12. 2021
					31.12. 2021	07.01. 2022
					14.01. 2022	21.01. 2022
					28.01. 2022	04.02. 2022
					11.02. 2022	18.02. 2022
					25.02. 2022	04.03. 2022

**J. FDP/Seminar/Workshops/Lectures to be attended and/or to
be conducted by Teachers**

Event Topic	NA
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Type / Nature (FDP/Webinar/Workshop etc.)		NA			
Organizing In-charge		NA			
Details regarding invited Resource Person		---			
Nature of Participation (e.g. Invited Speaker, Participant etc.)		NA			
Date/s	NA	Timing/s	NA	Mode	NA

K. Internal Assessment: House Exam (Test/Presentation etc.)&Assignment*

Course Code	Course Name	Unique Paper Code	Topic Name	Day and Date	Date/s of Exhibiting the Assessment Sheet to students, Discussing the marks, Returning/Retainin g
CBCS	BSc (H) Chemistry III yr	32177908	Introduction to Green Chemistry Principles of Green Chemistry and Designing a Chemical synthesis Examples of Green Synthesis/ Reactions and some real world cases	Thursday, 04/11/2021	11/11/2021
CBCS	BSc (H) Chemistry II yr	32173910	Hair dye, hair spray, shampoo, suntan lotions, face powder, lipsticks, talcum powder, nail enamel.	Monday, 02/11/2021	08/11/2021

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L. Organization of Department/College Society Meetings by Staff Advisor/Convener

Department/Society	Meeting Date	Purpose

M. College Functions

College Function	Function Date	Role to be played

