

I – Academic Planner

Teacher's Name: Dr. Vandana Meena

Teaching Plan: 2019-20

Semester: Odd

Department: Chemistry

S. No.	UPC	Paper Name	Core/AECC/GE/SEC	Topic/Unit	Start Date	End Date
1	32173902	Basic Analytical Chemistry	SEC	Basic Analytical Chemistry Introduction: Introduction to Analytical Chemistry and its interdisciplinary nature. Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Presentation of experimental data and results, from the point of view of significant figures. Analysis of soil: Composition of soil, Concept of pH and pH measurement, Complexometric titrations, Chelation, Chelating agents, use of indicators Analysis of water: Definition of pure water, sources responsible for	25.07.2019 13.08.2019 12.09.2019	08.08.2019 10.09.2019 10.10.2019

				contaminating water, water sampling methods, water purification methods.		
2	42177915/16	Analytical Biochemistry	DSE	<p>Enzymes: Nomenclature, classification, Characterization, Mechanism of enzyme action, factors affecting enzyme action, Co-enzymes and co-factors and their role in biological reactions, Specificity of enzyme action(Including stereo-specificity) , Effect of pH, temperature and ionic solution, etc. on enzyme activity, Enzyme inhibitors and their importance, phenomenon of inhibition(Competitive and Non competitive inhibition including allosteric inhibition). Introduction to Biocatalysis: Importance in —Green Chemistry and Chemical Industry. Drug action-receptor theory. Structure – activity relationships of drug molecules, binding role of –OH group,-NH₂ group, double bond and aromatic ring,</p> <p>Lipids: Introduction to oils and fats; common fatty acids present in oils and fats, Hydrogenation of fats and oils, Classification. Biological importance of triglycerides and phosphoglycerides and cholesterol; Liposomes and their biological</p>	29.07.2019	19.08.2019
					21.08.2019	30.09.2019

				radiochemical waste. • Introduction to water and waste analysis.		
5	32171301	INORGANIC CHEMISTRY – II, s- and p-Block Elements	Core	(Practical) (A) Iodo / Iodimetric Titrations 1. Estimation of Cu(II) and K ₂ Cr ₂ O ₇ using sodium thiosulphate solution (Iodometrically). 2. Estimation of antimony in tartar-emetic iodimetrically (B) Complexometric titrations using disodium salt of EDTA 1. Estimation of Mg ²⁺ , Zn ²⁺ 2. Estimation of Ca ²⁺ by substitution method (C) Inorganic preparations 1. Cuprous Chloride, Cu ₂ Cl ₂ 2. Manganese(III) phosphate, MnPO ₄ .H ₂ O 3. Aluminium potassium sulphate KAl(SO ₄) ₂ .12H ₂ O (Potash alum) or Chrome alum.	31.07.2019	06.11.2019
6	42171103	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic hydrocarbon	Core	(Practical) 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	26.07.2019	08.11.2019

				<p>titrating with KMnO_4.</p> <p>4. Estimation of Fe (II) ions by titrating it with $\text{K}_2\text{Cr}_2\text{O}_7$ using internal indicator.</p> <p>5. Estimation of Cu (II) ions iodometrically using $\text{Na}_2\text{S}_2\text{O}_3$.</p> <p>Section B: Organic Chemistry</p> <p>1. Purification of organic compound by crystallisation (from water and alcohol) and distillation.</p> <p>2. Criteria of purity: Determination of M.P./B.P.</p> <p>3. Separation of mixtures by chromatography: Measure the R_f value in each case (combination of two compounds to be given)</p> <p>a) 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.</p> <p>b) Identify and separate the sugars present in the given mixture by radial/ascending paper chromatography.</p>		
7	32175901	Atomic Structure, Bonding,	GE	(Practical)	09.08.2019	08.11.2019

General Organic
Chemistry & Aliphatic
hydrocarbon

Section A: Inorganic Chemistry

1. Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture.
2. Estimation of oxalic acid 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 $\text{K}_2\text{Cr}_2\text{O}_7$ using internal indicator.
5. Estimation of Cu (II) ions iodometrically using $\text{Na}_2\text{S}_2\text{O}_3$.

Section B: Organic Chemistry

1. Purification of OC by crystallization (from water and alcohol) and distillation.
2. Criteria of purity: Determination of Mpt/Bp.
3. Detection of extra elements (N, S, Cl, Br, I) in organic compound.
4. Separation of mixtures by Chromatography: Measure the R_f value in each case (combination of two compounds to be given)
(a) 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 paper chromatography (b) Identify and separate the sugars present in the given mixture by paper chromatography.	
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FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Teachers

Event Topic	Inauguration of Chemistry Society				
Type / Nature (FDP/Webinar/Workshop etc.)	Inaugural Lecture Series				
Organizing In-charge	Dr. M. Ramananda Singh				
Details regarding invited Resource Person	<ol style="list-style-type: none"> 1. Dr. Sunil K. Sharma Department Of Chemistry 2. Dr. Naba K. Chaudhary Scientist – G, DRDO 3. Dr. Lakshmi Raghupathy Former Director, Ministry of Forest, Government of India) 4. Dr. P. K. Rai Scientist F, DRDO 				
Nature of Participation (e.g. Invited Speaker, Participant etc.)	Participant				
Date/s	30.09.2019	Timing/s	10:00 AM – 5:00 PM	Mode	Offline

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
SEC	B.Sc.(H) Chemistry II Year	32173902	Basic Analytical Chemistry	Thursday 07.11.2019	Monday 11.11.2019

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

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

Department/Society	Meeting Date	Purpose

College Functions

College Function	Function Date	Role to be played

I – Academic Planner

Teacher's Name: Dr. Vandana Meena

Teaching Plan: 2019-20

Semester: Even

Department: Chemistry

S. No.	UPC	Paper Name	Core/AECC/GE/S EC	Topic/Unit	Start Date	End Date
1	32173902	Basic Analytical Chemistry	SEC	<p style="text-align: center;">Basic Analytical Chemistry</p> <p>Introduction: Introduction to Analytical Chemistry and its interdisciplinary nature. Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Presentation of experimental data and results, from the point of view of significant figures.</p> <p>Analysis of soil: Composition of soil, Concept of pH and pH measurement, Complexometric titrations, Chelation, Chelating agents, use of indicators</p> <p>Analysis of water: Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods.</p>	07.01.2020	08.04.2020

				<p>Chromatography: Definition, general introduction on principles of chromatography, paper chromatography, TLC etc.</p> <p>Ion-exchange: Column, ion-exchange chromatography etc</p>		
2	42173923	Basic Analytical Chemistry	SEC	<p>Basic Analytical Chemistry</p> <p>Introduction: Introduction to Analytical Chemistry and its interdisciplinary nature. Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Presentation of experimental data and results, from the point of view of significant figures.</p> <p>Analysis of soil: Composition of soil, Concept of pH and pH measurement, Complexometric titrations, Chelation, Chelating agents, use of indicators</p> <p>Analysis of water: Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods.</p> <p>Chromatography: Definition, general introduction on principles of chromatography, paper chromatography, TLC etc.</p> <p>Ion-exchange: Column, ion-exchange</p>	02.01.2020	09.04.2020

				chromatography etc		
3	42173916	Pesticide Chemistry	SEC	Classification, synthesis, structure activity relationship (SAR), mode of action, uses and adverse effects of representative pesticides in the following classes: Organochlorines (DDT, Gammexene); Quinones (Chloranil), Anilides (Alachlor and Butachlor).	04.01.2020	04.04.2020
4	32175913	Chemistry of s- and p-block Elements, States of Matters & Chemical Kinetics	GE	Hydrometallurgy with reference to cyanide process for silver and gold, Methods of purification of metals (Al, Pb, Ti, Fe, Cu, Ni, Zn): electrolytic, oxidative refining, van Arkel-de Boer process and Mond's process. Periodicity in <i>s</i> - and <i>p</i> -block elements with respect to electronic configuration, atomic and ionic size, ionization enthalpy, electronegativity (Pauling, Mulliken, and Alfred-Rochow scales). Allotropy in C, S, and P. Oxidation states with reference to elements in unusual and rare oxidation states like carbides and nitrides), inert pair effect, diagonal relationship and anomalous behaviour of first member of each group.	03.02.2020	07.04.2020
5	32173902	Basic Analytical Chemistry	SEC	Basic Analytical Chemistry (Practical) a. Determination of pH of soil	07.01.2020	08.04.2020

				<p>samples.</p> <p>b. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration.</p> <p>c. Determination of pH, acidity and alkalinity of a water sample.</p> <p>d. Determination of dissolved oxygen (DO) of a water sample.</p> <p>e. Paper chromatographic separation of mixture of metal ion (Ni^{2+} and Co^{2+}).</p> <p>f. Determination of ion exchange capacity of anion / cation exchange resin (using batch procedure if use of column is not feasible).</p>		
6	42177926	Organometallics, Bio-Inorganic Chemistry, Polynuclear Hydrocarbons, UV and IR	DSE	<p>(Practical)</p> <p>Section A: Inorganic Chemistry</p> <p>Separation of mixtures by chromatography: Measure the Rf value in each case. (Combination of two ions to be given)</p> <p>Paper chromatographic separation of Fe^{3+}, Al^{3+} and Cr^{3+} or Paper chromatographic separation of Ni^{2+}, Co^{2+}, Mn^{2+} and Zn^{2+}</p> <p>Preparation of any two of the following complexes and measurement of their conductivity:</p> <p>a. tetraamminecarbonatocobalt (III)</p>	06.01.2020	20.04.2020

				<p>nitrate</p> <p>b. tetraamminecopper (II) sulphate</p> <p>c. potassium trioxalatoferrate (III) trihydrate Compare the conductance of the complexes with that of M/1000 solution of NaCl, MgCl₂ and LiCl₃.</p> <p>Section B: Organic Chemistry Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (-COOH, phenolic, aldehydic, ketonic, amide, nitro, lo amines) and preparation of one derivative.</p>		
7	42177926	Organometallics, Bio-Inorganic Chemistry, Polynuclear Hydrocarbons, UV and IR	DSE	<p>(Practical)</p> <p>Section A: Inorganic Chemistry</p> <p>Separation of mixtures by chromatography: Measure the R_f value in each case. (Combination of two ions to be given)</p> <p>Paper chromatographic separation of Fe³⁺, Al³⁺ and Cr³⁺ <i>or</i> Paper chromatographic separation of Ni²⁺, Co²⁺, Mn²⁺ and Zn²⁺</p> <p>Preparation of any two of the following complexes and measurement of their conductivity:</p> <p>a. tetraamminecarbonatocobalt (III) nitrate</p>	08.01.2020	22.04.2020

				<p>b. tetraamminecopper (II) sulphate c. potassium trioxalatoferate (III) trihydrate Compare the conductance of the complexes with that of M/1000 solution of NaCl, MgCl₂ and LiCl₃.</p> <p>Section B: Organic Chemistry Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (-COOH, phenolic, aldehydic, ketonic, amide, nitro, 1o amines) and preparation of one derivative.</p>		
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FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Teachers

Event Topic	Emerging Trends and Future Challenges in Chemical Sciences
Type / Nature (FDP/Webinar/Workshop etc.)	National Conference
Organizing In-charge	Dr. M. Ramananda Singh
Details regarding invited Resource Person	<ol style="list-style-type: none"> Prof. Virinder Singh Parmar, MEC-CUNY, USA on ‘Natural products inspired discovery and development of novel antimicrobial, anti-inflammatory and antiplatelet agents’ Dr. Ravi P. Singh Indian Institute of Technology, Delhi

Topic:- Organo and Photoredox Catalysis for C-C bond formation Dr. Naba K. Chaudhary

3. Prof. Ashok K. Prasad

University of Delhi

Topic:- Sugars Precursors to Important Novel Molecules of Importance

4. Dr. P. K. Rai Dr. R. P. Singh

Scientist G, CFEES-DRDO

Topic: Fire Fighting – Environmental & Strategic Concerns and Upcoming Systems

5. Dr. Ravindra Kumar

Central Drug Research Institute, Lucknow

Topic: Oxidative Cyclization: An Expedient Strategy to Diverse Chiral Carbocycles

6. Prof. N. Rajmohan

Manipur University

Topic:- Multifunctional magnetic nanocomposites for cancer therapy

7. Prof. V. S. Chauhan

Padam Shri, Chairman Executive Committee, NAAC

Topic:- Shorter the better: recombinant polypeptides to ultrashort synthetic peptides

8. Dr. Vinod Kumar Tiwari

Banaras Hindu University

Topic:- Click Inspired Facile Synthesis of Diverse Glycodendrimers and their Therapeutic Potential

9. Dr. P. C. Mondal

Indian Institute of Technology Kanpur

	<p>Topic:- Concept of Multifunctional Molecular Devices: Challenges and Remediation</p> <p>10. Prof. Rita Kakkar University of Delhi Topic:- Computer-Aided Molecular Modeling & Drug Discovery</p> <p>11. Prof. A. K. Bakhshi Vice- Chancellor, PDMU, Haryana Topic:- Towards Excellence in Chemistry in the 21st Century: Challenges and Opportunities</p> <p>12. Dr. Bhanu Prakash Institute of Nano Science and Technology, Mohali Topic:- Fabrication of Microfluidic Devices for the Controlled Synthesis of Nanostructures and Their Online Photocatalytic Response</p> <p>13. Prof. M. R. Prathapachandra Kurup Central University of Kerala, Kerala Topic:- Sensing of Al(III) ions through transmetalation approach</p>				
Nature of Participation (e.g. Invited Speaker, Participant etc.)	Organizing Member				
Date/s	10.01.2020 – 11.01.2020	Timing/s	9:00 AM – 5:00 PM	Mode	Offline

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
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SEC	B.Sc.(H) Chemistry II Year	32173902	Basic Analytical Chemistry	Monday 18.05.2020	Saturday 23.05.2020
SEC	B.Sc.(LS) II Year	42173923	Basic Analytical Chemistry	Monday 18.05.2020	Saturday 23.05.2020
SEC	B.Sc.(AC) II Year	42173916	Pesticide Chemistry	Monday 18.05.2020	Saturday 23.05.2020

For Departments

A. Department activities for students – Election/Freshers/Welcome/Farewell/Department Seminars/Society functions

Event	Date	Timing	Venue	Event In-charge / Supervisor
Department Election				
Fresher's Welcome				
Farewell				
Department Society functions				
Department Seminars				
Any Other ()				

B. Outstation Field Visit for Students

Project Name / Paper Name			
Destination		Travel Mode	
Departure Month		Return	

Faculty-in-Charge		Number of Students going	
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C. FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Department

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		Timing/s		Mode	

I – Academic Planner

Teacher's Name: Dr. Vandana Meena

Teaching Plan: 2020-21

Semester: Odd

Department: Chemistry

S. No.	UPC	Paper Name	Core/AECC/GE/SEC	Topic/Unit	Start Date	End Date
1	32173902	Basic Analytical Chemistry	SEC	Basic Analytical Chemistry Analysis of soil: Composition of soil, Concept of pH and pH measurement, Complexometric titrations, Chelation, Chelating agents, use of indicators Chromatography: Definition, general introduction on principles of chromatography, paper chromatography, TLC etc. Ion-exchange: Column, ion-exchange chromatography etc. Introduction: Introduction to Analytical Chemistry and its interdisciplinary nature. Concept of sampling. Importance of accuracy, precision and sources of error in	11.08.2020 08.09.2020 01.10.2020	03.09.2020 29.09.2020 22.10.2020

				<p>analytical measurements. Presentation of experimental data and results, from the point of view of significant figures.</p> <p>Analysis of water: Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods.</p>	27.10.2020	05.11.2020
2	42177915/16	Analytical Biochemistry	DSE	<p>Biochemistry of disease: A diagnostic approach by blood/ urine analysis.</p> <p>Blood: Composition and functions of blood, blood coagulation. Blood collection and preservation of samples. Anemia</p> <p>Urine: Collection and preservation of samples. Formation of urine. Composition and estimation of constituents of normal and pathological urine. Regulation, estimation and interpretation of data for blood sugar, urea, creatinine, cholesterol and bilirubin.</p>	17.08.2020 12.10.2020	08.10.2020 09.11.2020
3	32171301	INORGANIC CHEMISTRY – II, s- and p-Block Elements	Core	Chemistry of <i>p</i> Block Elements: Electronic configuration, atomic and ionic size, metallic/non-metallic	13.08.2020	1.10.2020

				<p>character, melting point, ionization enthalpy, electron gain enthalpy, electronegativity, Allotropy of C, P, S; inert pair effect, diagonal relationship between B and Si and anomalous behaviour of first member of each group.</p> <p>Structure, bonding and properties: acidic/basic nature, stability, ionic/covalent nature, oxidation/reduction, hydrolysis, action of heat of the following:</p> <ul style="list-style-type: none"> • Hydrides: hydrides of Group 13 (only diborane), Group 14, Group 15 (EH_3 where E = N, P, As, Sb, Bi), Group 16 and Group 17. • Oxides: oxides of phosphorus, sulphur and chlorine • Oxoacids: oxoacids of phosphorus and chlorine; peroxyacids of sulphur • Halides: halides of silicon and phosphorus 	08.10.2020	13.11.2020
5	32171301	INORGANIC CHEMISTRY – II, s- and p-Block Elements	Core	<p>(Practical)</p> <p>(D) Iodo / Iodimetric Titrations</p> <p>3. Estimation of Cu(II) and $\text{K}_2\text{Cr}_2\text{O}_7$ using sodium thiosulphate solution (Iodometrically).</p> <p>4. Estimation of antimony in tartar-emetic iodometrically</p>	12.08.2020	03.12.2020

				<p>(E) Complexometric titrations using disodium salt of EDTA</p> <ol style="list-style-type: none"> 3. Estimation of Mg^{2+}, Zn^{2+} 4. Estimation of Ca^{2+} by substitution method <p>(F) Inorganic preparations</p> <ol style="list-style-type: none"> 4. Cuprous Chloride, Cu_2Cl_2 5. Manganese(III) phosphate, $MnPO_4 \cdot H_2O$ 6. Aluminium potassium sulphate $KAl(SO_4)_2 \cdot 12H_2O$ (Potash alum) or Chrome alum. 		
6	42171103	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic hydrocarbon	Core	<p>(Practical)</p> <p>Section A: Inorganic Chemistry - Volumetric Analysis</p> <ol style="list-style-type: none"> 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 $K_2Cr_2O_7$ using internal indicator. 5. Estimation of Cu (II) ions iodometrically using $Na_2S_2O_3$. <p>Section B: Organic Chemistry</p> <ol style="list-style-type: none"> 1. Purification of organic compound 	20.11.2020	26.02.2021

				<p>by crystallisation (from water and alcohol) and distillation.</p> <p>2. Criteria of purity: Determination of M.P./B.P.</p> <p>3. Separation of mixtures by chromatography: Measure the Rf value in each case (combination of two compounds to be given)</p> <p>a) 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.</p> <p>b) Identify and separate the sugars present in the given mixture by radial/ascending paper chromatography.</p>		
7	32175901	Atomic Structure, Bonding, General Organic Chemistry & Aliphatic hydrocarbon	GE	<p>(Practical)</p> <p>Section A: Inorganic Chemistry</p> <p>6. Estimation of sodium carbonate and sodium hydrogen carbonate present in a mixture.</p> <p>7. Estimation of oxalic acid by titrating it with KMnO_4.</p> <p>8. Estimation of water of crystallization in Mohr's salt by titrating with KMnO_4</p> <p>9. Estimation of Fe (II) ions by</p>	11.11.2020	12.02.2021

				<p>titrating it with $K_2Cr_2O_7$ using internal indicator.</p> <p>10. Estimation of Cu (II) ions iodometrically using $Na_2S_2O_3$.</p> <p>Section B: Organic Chemistry</p> <p>5. Purification of OC by crystallization (from water and alcohol) and distillation.</p> <p>6. Criteria of purity: Determination of Mpt/Bp.</p> <p>7. .Detection of extra elements (N, S, Cl, Br, I) in organic compound.</p> <p>8. .Separation of mixtures by Chromatography: Measure the R_f value in each case (combination of two compounds to be given)</p> <p>(a) 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 paper chromatography</p> <p>(b) Identify and separate the sugars present in the given mixture by paper chromatography.</p>	
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FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Teachers

Event Topic	Innovation in Scientific Research Methods
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Type / Nature (FDP/Webinar/Workshop etc.)		FDP			
Organizing In-charge		Dr. Reena Saxena			
Details regarding invited Resource Person					
Nature of Participation (e.g. Invited Speaker, Participant etc.)		Participant			
Date/s	14 th -18 th Oct, 2020	Timing/s	3:00 PM – 7:00 PM	Mode	Online

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
SEC	B.Sc.(H) Chemistry II Year	32173902	Basic Analytical Chemistry	12.11.2020	17.11.2020
Core	B.Sc.(H) Chemistry II Year	32171301	INORGANIC CHEMISTRY – II, s- and p-Block Elements	19.11.2020	26.11.2020

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

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

Department/Society	Meeting Date	Purpose

College Functions

College Function	Function Date	Role to be played

I – Academic Planner

Teacher's Name: Dr. Vandana Meena

Teaching Plan: 2020-21

Semester: Even

Department: Chemistry

S. No.	UPC	Paper Name	Core/AECC/GE/S EC	Topic/Unit	Start Date	End Date
1	32173902	Basic Analytical Chemistry	SEC	<p>Basic Analytical Chemistry</p> <p>Introduction: Introduction to Analytical Chemistry and its interdisciplinary nature. Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Presentation of experimental data and results, from the point of view of significant figures.</p> <p>Analysis of soil: Composition of soil, Concept of pH and pH measurement, Complexometric titrations, Chelation, Chelating agents, use of indicators</p> <p>Analysis of water: Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods.</p>	05.01.2021	20.04.2020

				<p>Chromatography: Definition, general introduction on principles of chromatography, paper chromatography, TLC etc.</p> <p>Ion-exchange: Column, ion-exchange chromatography etc</p>		
2	42173923	Basic Analytical Chemistry	SEC	<p>Basic Analytical Chemistry</p> <p>Introduction: Introduction to Analytical Chemistry and its interdisciplinary nature. Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Presentation of experimental data and results, from the point of view of significant figures.</p> <p>Analysis of soil: Composition of soil, Concept of pH and pH measurement, Complexometric titrations, Chelation, Chelating agents, use of indicators</p> <p>Analysis of water: Definition of pure water, sources responsible for contaminating water, water sampling methods, water purification methods.</p> <p>Chromatography: Definition, general introduction on principles of chromatography, paper chromatography, TLC etc.</p> <p>Ion-exchange: Column, ion-exchange</p>	14.01.2020	15.04.2020

				chromatography etc		
3	42173916	Pesticide Chemistry	SEC	Classification, synthesis, structure activity relationship (SAR), mode of action, uses and adverse effects of representative pesticides in the following classes: Organochlorines (DDT, Gammexene); Quinones (Chloranil), Anilides (Alachlor and Butachlor).	09.01.2021	22.03.2021
5	32173902	Basic Analytical Chemistry	SEC	Basic Analytical Chemistry (Practical) <ul style="list-style-type: none"> g. Determination of pH of soil samples. h. Estimation of Calcium and Magnesium ions as Calcium carbonate by complexometric titration. i. Determination of pH, acidity and alkalinity of a water sample. j. Determination of dissolved oxygen (DO) of a water sample. k. Paper chromatographic separation of mixture of metal ion (Ni^{2+} and Co^{2+}). l. Determination of ion exchange capacity of anion / cation exchange resin (using batch procedure if use of column is not feasible). 	09.01.2021	20.03.2021
6	42177926	Organometallics, Bio-Inorganic Chemistry, Polynuclear Hydrocarbons, UV and IR	DSE	(Practical) Section A: Inorganic Chemistry Separation of mixtures by chromatography: Measure the R_f value in each case. (Combination of	03.01.2021	24.03.2021

				<p>two ions to be given)</p> <p>Paper chromatographic separation of Fe³⁺, Al³⁺ and Cr³⁺ or Paper chromatographic separation of Ni²⁺, Co²⁺, Mn²⁺ and Zn²⁺</p> <p>Preparation of any two of the following complexes and measurement of their conductivity:</p> <p>a. tetraamminecarbonatocobalt (III) nitrate</p> <p>b. tetraamminecopper (II) sulphate</p> <p>c. potassium trioxalatoferrate (III) trihydrate Compare the conductance of the complexes with that of M/1000 solution of NaCl, MgCl₂ and LiCl₃.</p> <p>Section B: Organic Chemistry Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (-COOH, phenolic, aldehydic, ketonic, amide, nitro, 1o amines) and preparation of one derivative.</p>		
7	42177926	Organometallics, Bio-Inorganic Chemistry, Polynuclear Hydrocarbons, UV and IR	DSE	<p>(Practical)</p> <p>Section A: Inorganic Chemistry</p> <p>Separation of mixtures by chromatography: Measure the R_f value in each case. (Combination of two ions to be given)</p>	04.01.2021	15.03.2021

				<p>Paper chromatographic separation of Fe³⁺, Al³⁺ and Cr³⁺ <i>or</i> Paper chromatographic separation of Ni²⁺, Co²⁺, Mn²⁺ and Zn²⁺</p> <p>Preparation of any two of the following complexes and measurement of their conductivity: a. tetraamminecarbonatocobalt (III) nitrate b. tetraamminecopper (II) sulphate c. potassium trioxalatoferrate (III) trihydrate Compare the conductance of the complexes with that of M/1000 solution of NaCl, MgCl₂ and LiCl₃.</p> <p>Section B: Organic Chemistry Systematic Qualitative Organic Analysis of Organic Compounds possessing monofunctional groups (-COOH, phenolic, aldehydic, ketonic, amide, nitro, 1o amines) and preparation of one derivative.</p>	
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FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Teachers

Event Topic	Emerging Trends and Future Challenges in Chemical Sciences” (ETFC-2021)
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Type / Nature (FDP/Webinar/Workshop etc.)		Webinar			
Organizing In-charge		Dr. M. Ramananda Singh			
Details regarding invited Resource Person		<ol style="list-style-type: none"> 1. Prof. Ramakrishna Ramaswamy, <i>IIT Delhi</i> 2. Dr. Ajay Kumar Srivastava, CSIR-CDRI, Lucknow 3. Dr. Jeetender Chugh, IISER, Pune 4. Prof. M. Thirumal, Department of Chemistry, <i>University of Delhi</i> 			
Nature of Participation (e.g. Invited Speaker, Participant etc.)		Participant			
Date/s	4 th -5 th March, 2021	Timing/s	10:00 AM – 1:50 PM	Mode	Online

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
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SEC	B.Sc.(H) Chemistry II Year	32173902	Basic Analytical Chemistry	17.04.2021	24.04.2021
SEC	B.Sc.(LS) II Year	42173923	Basic Analytical Chemistry	22.04.2021	29.04.2021
SEC	B.Sc.(AC) II Year	42173916	Pesticide Chemistry	12.04.2021	19.04.2021

I – Academic Planner

Teacher's Name: Dr. Vandana Meena

Teaching Plan: 2021-22

Semester: Odd

Department: Chemistry

S. No.	UPC	Paper Name	Core/AECC/GE/SEC	Topic/Unit	Start Date	End Date
1	32173902	Basic Analytical Chemistry	SEC	<p>Basic Analytical Chemistry</p> <p>Introduction: Introduction to Analytical Chemistry and its interdisciplinary nature. Concept of sampling. Importance of accuracy, precision and sources of error in analytical measurements. Presentation of experimental data and results, from the point of view of significant figures.</p> <p>Chromatography: Definition, general introduction on principles of chromatography, paper chromatography, TLC</p>	24.08.2021	21.09.2021
					23.10.2020	30.10.2020

2	42177915/16	Analytical Biochemistry	DSE	<p>Biochemistry of disease: A diagnostic approach by blood/ urine analysis.</p> <p>Blood: Composition and functions of blood, blood coagulation. Blood collection and preservation of samples. Anemia</p> <p>Urine: Collection and preservation of samples. Formation of urine. Composition and estimation of constituents of normal and pathological urine. Regulation, estimation and interpretation of data for bilirubin.</p>	28.07.2021	06.09.2021
					08.09.2021	27.09.2021
3	32171301	INORGANIC CHEMISTRY – II, s- and p-Block Elements	Core	<p>(Practical)</p> <p>Iodo / Iodimetric Titrations</p> <p>5. Estimation of Cu(II) and K₂Cr₂O₇ using sodium thiosulphate solution (Iodometrically).</p> <p>6. Estimation of antimony in tartar-emetic iodimetrically</p> <p>Inorganic preparations</p> <p>7. Cuprous Chloride, Cu₂Cl₂</p> <p>8. Manganese(III) phosphate,</p>	18.08.2021	29.09.2021

				MnPO ₄ .H ₂ O 9. Aluminium potassium sulphate KAl(SO ₄) ₂ .12H ₂ O (Potash alum) or Chrome alum.		
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FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Teachers

Event Topic	UV- visible spectrometry and its applications				
Type / Nature (FDP/Webinar/Workshop etc.)	Workshop				
Organizing In-charge	Dr. Ram Sunil Lalji				
Details regarding invited Resource Person	<ol style="list-style-type: none"> 1. Dr. Kiran Arora Department of Chemistry, KMC 2. Dr. Ruchi Sharma Pandey Department of Chemistry, KMC 				
Nature of Participation (e.g. Invited Speaker, Participant etc.)	Participant				
Date/s	19.07.2021	Timing/s	1:40 PM – 4:00 PM	Mode	Online

Event Topic	Colloquium on Bio Molecular Chemistry.				
Type / Nature (FDP/Webinar/Workshop etc.)	Colloquium				
Organizing In-charge	Dr. Ram Sunil Lalji				
Details regarding invited Resource Person	<ol style="list-style-type: none"> 1. Dr. A.K. Prasad Department of Chemistry 2. Dr. Vivek K. Sharma 				

		Associate Director Technology- Nucleic Acids, MassBiologics, USA			
Nature of Participation (e.g. Invited Speaker, Participant etc.)		Participant			
Date/s	17.09.2021	Timing/s	2:45 PM – 4:30 PM	Mode	Online

For Departments

D. Department activities for students – Election/Freshers/Welcome/Farewell/Department Seminars/Society functions

Event	Date	Timing	Venue	Event In-charge / Supervisor
Department Election				
Fresher's Welcome				
Farewell				
Department Society functions				
Department Seminars				
Any Other ()				

E. Outstation Field Visit for Students

Project Name / Paper Name			
Destination		Travel Mode	
Departure Month		Return	
Faculty-in-Charge		Number of Students going	

F. FDP/Seminar/Workshops/Lectures to be attended and/or to be conducted by Department

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		Timing/s		Mode	