**PG DEPARTMENT OF CHEMISTRY**

*PG Chemistry Syllabus Distribution*

***YEAR:- 2020-2021***

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| **Semester** | **Paper** | **Dr. Khurshid** **A. Khan** | **Prof. J. P. Mishra** | **Dr. H. K. Shaw** | **Dr. A.K. Giri** | **Mr. Ali Jaan Hussein** |
| **I** | **CC-1** | 1.Cromatography2.Spectrophotome tric Analysis3.Use of Conductometric&Potentiometric Analysis |  | 1.Principle of  Organic  Analysis | 1.Principle of  Inorganic  analysis | 1.Data Analysis  |
| **CC-2** | 1.Metal πComplexes | 1.Streochemistry  and Bonding in  Main Group  compounds2.Metal-Ligand EqulibriainSolution |  |  | 1.Reacion  Mechanism of  Transition  Metal  Complexes2.Metal-Ligand  Bonding3.Electronic  Spectra and  Magnetic  Properties of  Transition  Metal  Complexes |
| **CC-3** | 1.Aliphatic Nucleopilic Substitution2.Aromatic Nucleophilic Substitution3.Aliphatic and aromatic Electrophilic substitution |  | 1.Nature of Bonding in Oraganic Molecules and reaction mechanism2.Rection Mechanism: Structure and Reactivity |  |  |
| **CC-4** | 1.Quantum ChemistryA. Introduction to Exact Quantum Mechanical ResultsB. Angular MomentumC. Electronic Structure of AtomsD. Molecular Orbital Theory1. ThermodynamicsB. Statistics Thermodynamics | 1. ThermodynamicsA. Classical Thermidynamics  |  | 1.Thermodynamics2.Chemical Dynamics | 1. Chemical Dynamics |

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| **II** | **CC-6** | 1.Vibrational SpectroscopyA. Infrared SpectroscopyB. Raman Spectroscopy2.Nuclear Magnetic Resonance Spectroscopy |  |  |  | 1.Electronic SpectroscopyA. Atomic SpectroscopyB. Molecular Spectroscopy2. Electron Spin Resonance Spectroscopy 3. X-ray diffractions |
| **CC-7** | 1.Symmetry and Group Theory in Chemistry2. Bioenergrtics and ATP Cycle3. Transport and Storage of Dioxygen4. Electron Transfer in Biology |  |  | 1.Metal ions in Biological Sysytems2. Biochemisty of non-metals |  |
| **CC-8** | 1.Sterochemistry2. Pericyclic Reactivity  |  | 1.Addition to Carbon-Carbon Multiple Bonds and Carbon Hetero Multiple Bonds2. Addition to Carbon Hetero Multiple Bonds3. Elimination Reaction |  |  |
| **CC-9** | 1.Surface ChemistryAdsorption | 1.Electrochemistry2. Magneto Chemistry and Magnetic Properties of substances. | 1.Macromolecules |  |  |

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| **CC-12** | 1.Corrosion | 1.Fuel | 1.Portland Cement & Plaster of Paris2.Water Treatment3.Advance Polymers4.Industrial Waste Management  |  |  |
| **DSE-1****Specl.****Paper** |  |  |  | 1.Alkyls and Aryls of Transition Elements2.Compounds of Transition Metal-Carbon Multiple Bonds3.Transition metal π Complexes | 1.Homogeneous Catalysis2.Fluxional Oraganometallic compounds3.Electronic structure of inorganic clusters |
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| **IV** | **CC-13** | 1.Drug2.Enzymes and Mechanism of Enzyme Action3.Kinds of Reactions Catalysed by Enzymes4.Co-Enzyme Chemistry5.Biiotechnological Applications of Enzymes |  |  |  |  |
| **CC-14** |  |  | 1.Siol | 1.Environment2.Hydrosphere3.Atmosphere | 1.Green chemistry: Definition and Objective2.Green Chemistry: real Applications |
| **DSE-3****Specl.****Paper** |   | 1.Calcium in biology2.Metallelloenzymes3.Metal-Nucleic acid Interactions4.Metals in Medicine |  | 1.Metal storage transport and Biomineralization | 1.Supramolecular chemistry |
| **DSE-3****Specl.****Paper** | 1.Steric and conformational properties2.Nueleophilic and electrothilic reactivity3.Supramolecular Chemistry |  | 1.Six-membered Heterocycles with one heteroatom2.Structure determination and synthesis of Vit. A,B,B1,B2,B6 Vit. C and Vit. D3.Rearrangement reactions |  |  |

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| **CC-12** | 1.Corrosion | 1.Fuel | 1.Portland Cement & Plaster of Paris2.Water Treatment3.Advance Polymers4.Industrial Waste Management  |  |  |
| **DSE-1****Specl.****Paper** |  |  |  | 1.Alkyls and Aryls of Transition Elements2.Compounds of Transition Metal-Carbon Multiple Bonds3.Transition metal π Complexes | 1.Homogeneous Catalysis2.Fluxional Oraganometallic compounds3.Electronic structure of inorganic clusters |
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| **DSE-3****Specl.****Paper** |   | 1.Calcium in biology2.Metallelloenzymes3.Metal-Nucleic acid Interactions4.Metals in Medicine |  | 1.Metal storage transport and Biomineralization | 1.Supramolecular chemistry |
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***YEAR:- 2023-2024***

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| **Semester** | **Paper** | **Dr. Khurshid** **A. Khan** | **Prof. J. P. Mishra** | **Dr. H. K. Shaw** | **Miss. Ariba Fatima** | **Ms. Mousumi Sarangi** |
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| **CC-12** | 1.Corrosion | 1.Fuel | 1.Portland Cement & Plaster of Paris2.Water Treatment3.Advance Polymers4.Industrial Waste Management  |  |  |
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