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**SEMESTER-II**

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**GE T2: STATES OF MATTER & CHEMICAL KINETICS, CHEMICAL BONDING & MOLECULAR STRUCTUR, p-BLOCK ELEMENTS**

**(Credits: Theory-04, Practicals-02)**

**Theory: 60 Lectures**

***Section A: Physical Chemistry-I* (30 Lectures)**

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| **Chapters** | **No. of lectures****(30)** | **Marks** | **January-February** | **Internal Exam****1st Week of March** | **2nd Week of March- May** | **1st June-7th June** | **End-Sem Exam****8th June-22nd June** | **End-Sem Break** |
| **Kinetic Theory of Gases and Real gases**  | 10 | 40 | 11 | 10 |  | Study Leave | Exam | 23rdJune-30th June |
| **Liquids**  | 6 |  | 7 |
| **Solids**  | 6 |  | 7 |
| **Chemical Kinetics**  | 8 | 9 |  |

***Section B: Inorganic Chemistry-II* (30 Lectures)**

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| **Chapters** | **No. of lectures****(30)** | **Marks** | **January-February** | **Internal Exam****1st Week of March** | **2nd Week of March- May** | **1st June-7th June** | **End-Sem Exam****8th June-22nd June** | **End-Sem Break** |
| **Chemical Bonding and Molecular Structure**  | 16 | 40 | 06 | 10 | 10 | Study Leave | Exam | 23rdJune-30th June |
| **Comparative study of p-block elements** | 14 | 05 | 10 |

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| **Chapters** | **No. of lectures****(30)** | **Marks** | **January-Feb****(28)** | **Internal Exam****1st Week of March****(10 marks)** | **2nd Week of March- May****(40)** | **1st June-7th June** | **End-Sem Exam****8th June-22nd June** | **End-Sem Break** |
| 1. Surface tension measurement (use of organic solvents excluded)

a) Determination of the surface tension of a liquid or a dilute solution using a Stalagmometer b) Study of the variation of surface tension of a detergent solution with concentration  |  |  |  14 | 10 |  | Study Leave | Exam | 23rdJune-30th June |
| II) Viscosity measurement (use of organic solvents excluded) a) Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald’s viscometer b) Study of the variation of viscosity of an aqueous solution with concentration of solute  |  | 25 |  | 20 |
| III) Study the kinetics of the following reactions a) Initial rate method: Iodide-persulphate reaction b) Integrated rate method: (i) Acid hydrolysis of methyl acetate with hydrochloric acid (ii) Compare the strengths of HCl and H2SO4 by studying kinetics of hydrolysis of methyl acetate  |

**GE P2: STATES OF MATTER & CHEMICAL KINETICS, CHEMICAL BONDING & MOLECULAR STRUCTUR, p-BLOCK ELEMENTS LAB**

(**60 Lectures)**

***Section A: Physical Chemistry-LAB* (15x2=30 Lectures)**

***Section B: Inorganic Chemistry-LAB* (30 Lectures)**

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| **Chapters** | **No. of lectures****(30)** | **Marks** | **January-Feb****(28)** | **Internal Exam****1st Week of March****(10 marks)** | **2nd Week of March- May****(40)** | **1st June-7th June** | **End-Sem Exam****8th June-22nd June** | **End-Sem Break** |
| **Qualitative semimicro analysis of mixtures containing three radicals. Emphasis should be given to the understanding of the chemistry of different reactions.** Acid Radicals: Cl-, Br-, I-, NO2-, NO3-, S2-, SO42-, PO43-, BO33-, H3BO3. Basic Radicals: Na+, K+, Ca2+, Sr2+, Ba2+, Cr3+, Mn2+, Fe3+, Ni2+, Cu2+, NH4+. |  | **25** |  14 | 10 | 20 | Study Leave | Exam | 23rdJune-30th June |