-------------------------------------------------------------------------------------------------------

**SEMESTER-II**

**-----------------------------------------------------------------------------------------------------------**

**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)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 |