

Teaching Plan Academic Year 2015-2016

Class : B.Sc.

Semester :IV

Subject : Chemistry

Paper No. : XIII

Periods per weeks : Th. 3Pract. 6

Test (Date) : _____

Weeks (Total) :

Tutorial (Date) : _____

WEEKS	TOPICS TO BE COVERED
1	1) Chemistry of Elements of First Transition Series: General characteristic features of d-block elements. Properties of the elements of the first transition series:
2	Ionic Size, Atomic Size, Metallic properties, Ionization potential, magnetic properties, Oxidation State
3	2) Co-ordination Compounds: Werner's Co-ordination Theory and its experimental verification effective atomic Number concept
4	chelates, nomenclature of co-ordination compounds, nomenclature of co-ordination compounds, ,
5	isomerism in Co-ordination compounds, valence bond theory of transition metal complexes
6	3) Chemistry of Lanthanide Elements: 06 Hrs. Occurrence and Isolation of Lanthanides, Electronic Configuration Oxidation states, Ionic Radii,
7	Lanthanide Contraction and its Consequences.
8	4) Chemistry of Actinides: 05 Hrs. Occurrence, Position in the periodic table, Electronic configuration. Oxidation State, chemistry of separation of Np, Pu and Am from U
9	5) Acids and Bases: Arrhenius, Bronsted-Lawry concept
10	The Lux-Flood, Solvent System
11	and Lewis Concept of Acids and Bases
12	Revision
13	Practical Exam
14	Term exam
15	Terminal exam

Teacher's Signature :

Dr. Pathan Arif

H.O.D.'s Signature

Teaching Plan
Academic Year 2015-16

Class : B.Sc II year
Subject : Physical Chemistry
Periods/ week: Th. Pract.
Weeks (Total): 15
(Date): _____

Semester:IV
Paper No: XI
Test (Date): _____
Tutorial

Week	Topic to be Covered
1	Phase Rule: Statement and meaning of term, Phase, Component, Degree of freedom, Derivation of Phase rule, Phase equilibria of one Component System: Water System
2	Phase equilibria of Two Component System: Solid Liquid Equilibria, Simple Eutectic Pb – Ag System. Desilverisation of lead
3	Compound formation with congruent melting point and incongruent melting point, Freezing mixtures
4	Raoult's Law and Henry's Law, Ideal and non ideal system
5	Azeotropes and Ethanol Water System, Partially Miscible Liquids
6	Lower and Upper Consolute temperature. Effect of Impurity on Consolute Temperature
7	Electrochemistry I : Conductance in metal and in electrolytes, Specific Conductance and Equivalent Conductance.
8	Measurement of Equivalent Conductance, variation of equivalent conductance with dilution, Numerical Problems
9	Kohlrausch's Law and its application. Arrhenius Theory of Electrolytic Dissociation and its Limitations. Transport number; Definition, determination by Hittorf's Method and Moving Boundary Method.
10	Conductometric Titrations: Types and its Advantages.
11	Electrochemistry II: Types of Reversible Electrodes: Gas Metal Ion, Metal – metal ion, Metal Insoluble salt, Anion and redox Electrodes. Nernst Equation, Single electrode potential

12	SHE, Reference Electrode, Standard Electrode potential, Sign Conventions, Electrochemical Series and its significance.
13	Electrolytic and Galvanic cells, EMF of cells and its measurement, Calculation of Thermodynamic Quantities and cell reaction. Def of pH, pKa
14	Acidic and Basic Buffers, Mechanism of buffer action, Henderson – Hasselbatch equation.
15	Corrosion, Electrochemical Theory of Corrosion.

Dr. Mrs. Syed Ummul Khair Asema

Teacher's Signature

H.O.D.'s Signature