

CHEMISTRY DEPARTMENT

Recommendations/Suggestions for the Improvement of Syllabus

S. No	Grade, Semester & Course Title	Original Syllabus	Recommended Syllabus	Justification	Periods Required For Respective Topic
1	XII Chemistry (Theory)	Physical Chemistry			
a		Introduction To Chemistry Matter, Elements, Mixture and Compound, Symbol, Chemical formula. Chemical equation, Mole, Atom, Atomic weight.	-	-	2
b		Stoichiometry (Molecular Formula, Molecular weight, Equivalent weight, Types of reaction, Oxidation number, oxidizing agent reducing agent.)	Mole ratio has to be added including mass- mass, mass- volume and volume- volume relationship. Redox reactions have to be extended. Redox reaction in terms of all three, oxygen transfer, hydrogen transfer and electron transfer has to be mentioned. Rules for assigning oxidation state.	Stoichiometry includes all these relations. In practical and in BS classes redox reactions are very important.	3

c		Structure Of Atom (Elementary ideas of electron, Neutron, Dalton atomic theory.)	–	–	1
d		Law Of Chemical Composition 1. Law of conservation of mass 2. Law of constant or definite proportion 3. Law of multiple proportion 4. Law of reciprocal proportion	–	–	2
e		Chemical Bond Valency, electronegativity, covalent bond, ionization potential, polar and non-polar and ionic bond	Concept of sigma and pi bond. Electronic configuration in ground and excited state. Electronic configuration of neutral atom, cation and anion.	Difference b/w sigma and pi bond is given in past papers. Electronic configuration also comes every year in exams.	2
2		Inorganic chemistry			
a		Introduction to periodic table	–	–	
b		Solution • Definition, Type of solution, Concentration units of solution, saturation of solution • Differentiate of a true solution, colloidal	Numericals of molarity and normality. Equivalent weight and molecular weight.	–	3

		solution and suspensions			
c		Acid, base and salt	All three theories of acid base. Conjugate acid base pair.		4
d		General characteristics of Gasses Preparation, properties, and uses of 1. Hydrogen 2. Oxygen 3. Hydrogenperoxide 4. Carbondioxide including fire extinguisher	–	–	4
e		Study of nonmetals (occurrence and chemical properties) 1. Carbon and its allotropic forms 2. Halogen family and their comparison	–	–	2
f		Study of metals (occurrence, ores, chemical properties and uses) 1. Alkali metals(sodium, potassium) 2. Light metals (aluminum, magnesium)	–	–	3
3		Organic Chemistry			

a		Introduction to organic chemistry and differentiate between organic and inorganic compounds			1
b		Introduction to hydrocarbons 1. Saturated hydrocarbon (alkane), preparation and properties 2. Unsaturated hydrocarbon (alkene) preparation and properties.	Nomenclature of hydrocarbons, concept of normal iso, neo structures. Concept of primary, secondary and tertiary carbons. In unsaturated hydrocarbons alkynes also included.	3-6 marks of paper comprises from these.	8
c		Alcohol, introduction and types of alcohol, preparation and reaction of ethyl alcohol	Nomenclature must be mentioned.	Nearly comes every year in paper	4

Practical

S. No	Grade, Semester & Course Title	Original Syllabus	Recommended Syllabus	Justification	Periods Required For Respective
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	XII Chemistry (Practical)				
1		1. Titration To find the normality and amount of given acid or base in given volume.	—	—	18
2		2. Salt analysis <ul style="list-style-type: none"> • Copper sulphate • Zinc sulphate • Aluminum sulphate • Nickle sulphate • Ferrous sulphate • Cobalt chloride • Ferric chloride • Barium nitrate • Lead nitrate • Ammonium carbonate Analysis includes three steps a. Priliminary examinations include state. Odour, colour and solubility. b. Detection of anion (acidic radical) in the given salt. c. Detection of basic	—	—	24

		radical (cation) in the given salt.			
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BOOKS RECOMMENDED:

- 1: New School Chemistry By Osei Yaw Ababio
- 2: XII Chemistry Of Sind Text Board
- 3: Practical Book by Miss Nuzhat Nasir