

MAHARASHTRA AGRICULTUREAL UNIVERSITIES
AGRICUTURE POLYTECHNIC
(LOWER AGRICULTURAL EDUCATION)

Course Title: General Science – I (Chemistry – I)

First Year

Lecture No.	Chapter No.	Topic to be covered	Weightage (%)
Physical and inorganic chemistry			
1	1	Basic concept of chemistry - Importance, Role, Definition. Branches of chemistry	3
2 & 3	2	Fundamental and derived units and their SI units - Systems of units Fundamental basic units, Avogadro's law, Avogadro's number, Molecular weight	2
4 -- 6	3	State of matter - Introduction, States of matter, Ideal gas equation. Liquid state. Qualitative description of vapour pressure, surface tension Viscosity, Classification of solid and their types	3
7 ---10	4	Atomic structure – Introduction. Rutherford's nuclear model Planks quantum theory, Bohr's atomic model Idea of shells, sub shells and orbitals Electronic configuration of elements	2
11--12	5	Periodic table – Modern periodic table. Classification of elements on basis of electronic configuration Periodic trend, Properties, Atom, Radius, Screening effective nuclear charges	2
13--14	6	Redox Reaction – Introduction, Classical concept of oxidation and reduction, Electron transfer concept Oxidizing agent and reduction agent, Difference between oxidation and redaction	3
15	7	Chemical equilibrium – Introduction, Types of chemical reaction, difference between reversible and irreversible reaction, Chemical equilibrium, Law of mass action, Mass law equation	4
16	8	Adsorption – Introduction, Definition, Phenomenon, Difference between adsorption and absorption, Force between adsorbent and adsorbate, Types of adsorption, Factors affecting on adsorption, Freundlich adsorption Isotherm	4
17--18	9	Nature of chemical bond - Introduction, Electronic theory of valency, Postulates .Octate rule. Limitation, Types of bond, Valence bond theory	3
Organic and inorganic chemistry			
19 --21	10	Chemistry of carbon compounds – Introduction, impotence of organic chemistry. General characteristics of organic compound, Classification of organic compounds. Homologous series,. Empirical and molecular formula	3
22	11	Alkanes – Introduction, Structure of methane and ethane, Classification of alkanes isomerism in alkanes. Nomenclature Physical properties of alkanes chemical properties, Uses.	3
23	12	Alkenes – Introduction, Structure of ethane, Isomerism,	2

		Nomenclature, Classification, Physical and chemical properties, Uses.	
24	13	Alkynes – Introduction, Structure of acetylene, Nomenclature, Physical and chemical properties (Only enlist), Uses	2
25	14	Aromatic compounds – Introduction, Characteristics difference between aliphatic and aromatic compounds, Benzene structure, Physical and chemical properties.	4

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Sr. No.	Topic	Name Reference Book	Page No.
	Physical and inorganic chemistry		
1	Basic concept of chemistry- Importance, Role, Definition. Branches of chemistry	Chem. Class XI Nikita Publication, Latur	1,2,3
2	Fundamental and derived units and their SI units - Systems of units Fundamental basic units, Avogadro's law, Avogadro's number, Molecular weight		3,4,6,9,18
3	State of matter - Introduction, States of matter, Ideal gas equation. Liquid state. Qualitative description of vapour pressure, surface tension Viscosity, Classification of solid and their types		52,59,65,67,68,70,71
4	Atomic structure – Introduction. Rutherford's nuclear model Planks quantum theory, Bohr's atomic model Idea of shells, sub shells and orbitals Electronic configuration of elements		100,101,103,106,113
5	Periodic table – Modern periodic table. Classification of elements on basis of electronic configuration Periodic trend, Properties, Atom, Radius, Screening effective nuclear charges		123,126,131,
6	Redox Reaction – Introduction, Classical concept of oxidation and reduction, Electron transfer concept Oxidizing agent and reduction agent, Difference between oxidation and reduction		143,144,145,150
7	Chemical equilibrium – Introduction, Types of chemical reaction, difference between reversible and irreversible reaction, Chemical equilibrium, Law of mass action, Mass law equation		163,165,166,168,169

8	Adsorption – Introduction, Definition, Phenomenon, Difference between adsorption and absorption, Force between adsorbent and adsorbate, Types of adsorption, Factors affecting on adsorption, Freundlich adsorption Isotherm	193,194,195,197
9	Nature of chemical bond - Introduction, Electronic theory of valency, Postulates .Octate rule. Limitation, Types of bond, Valence bond theory	205,208,209
	Organic and inorganic chemistry	
10	Chemistry of carbon compounds – Introduction, impotence of organic chemistry. General characteristics of organic compound, Classification of organic compounds. Homologous series,. Empirical and molecular formula	308,309,316,321
11	Alkanes – Introduction, Structure of methane and ethane, Classification of alkanes isomerism in alkanes. Nomenclature Physical properties of alkanes chemical properties, Uses.	335,336,344,350,
12	Alkenes – Introduction, Structure of ethane, Isomerism, Nomenclature, Classification, Physical and chemical properties, Uses.	355,365,357,359,364,371
13	Alkynes – Introduction, Structure of acetylene, Nomenclature, Physical and chemical properties (Only enlist), Uses	375,378,379,384
14	Aromatic compounds – Introduction, Characteristics difference between aliphatic and aromatic compounds, Benzene structure, Physical and chemical properties.	388,390,391,392,

Reference:

1. **Maharashtra state Board of secondary and higher secondary Education, Pune (2011). Std. XI**
2. **General Chemistry - N. Glinka**
3. **Physical chemistry – Atkins**
4. **Modern inorganic chemistry – R.C. Agrawal**
5. **Introduction to organic chemistry, 2008. John McMury**
6. **A. P. Narhare and V.R. Utake (2007) Chemistry (XI)
revised Ed. latur pattern notes, Nikita publication,
Latur**