

Programme name and course code: Master's Degree minor elective paper for another PG semester- subject (Chemistry)

Course code and name: CHE MEP1- Elementary Chemistry MM:25+75=100

CREDIT:4

OBJECTIVES:

- The main objectives of studying chemistry subject is the development and academic excellence.
- The goal and studying of chemistry is defined as the study of matter and energy and its interaction.
- Study of every substances and its behaviour individually. It's also involves the study of every substance of which the entire universe is made of.
- Chemistry is fundamental part of our lives and our body is made of chemicals.

Introduction to biomolecules: Carbohydrates, protein, amino acids and lipids.

UNIT	Topics	Credit	Hours
Unit I	<p>UNIT -I: Inorganic Chemistry Introduction to Inorganic Chemistry, Elements, their symbols and Periodic properties, type of reactions (combination, Decomposition, Single displacement and Double displacement reactions). Type of Inorganic Compounds (Water, Salt Acid and Base), Scope and Application of Inorganic Chemistry in medicine and health care, Common salts and compound (NaOH) in our daily life, Baking soda (preparation of cake and food stuff), Ceramic industry, Electrical field (electric circuit and silicon in computer).</p> <p>Role of Inorganic Chemistry in Biological system: Role of essential elements (Na, K, Mg, Ca, Cu Zn, Se P, S, Fe, Co and I), Haem protein-Haemoglobin, Myoglobin and chlorophyll.</p>	1	15
Unit II	<p>UNIT-II : Organic chemistry Hydrocarbons, aliphatic and aromatic compounds, Curved arrow notation, half-headed and double-headed arrows, homolytic and heterolytic bond fission, Types of reagents – electrophiles and nucleophiles, Types of organic reactions, Energy considerations. Reactive intermediates – Carbocations, carbanions, free radicals, radicals, carbenes, arynes and nitrenes (with examples).</p>	1	15
Unit III	<p>UNIT – III: Physical Chemistry Gaseous State: Postulates of kinetic theory of gases, Ideal behaviour of gasses, deviation from ideal behaviour,. Root mean square, average and most probable velocities.</p> <p>Liquid State: Introduction to liquid state. Intermolecular forces, types of liquid crystals.</p> <p>Solid State: Introduction and types of solids. Simple structure of NaCl, CsCl, diamond and graphite.</p>	1	15

apl

malg

D

*Prof. D. Ray
Online*

*Prof. Baliram
Online course*

Unit IV	UNIT – IV: Mathematical Concepts and Computers B. Mathematical Concepts: Logarithmic relations, differentiation of functions like K_x , e^x , X_n , $\sin x$, $\log x$; maxima and minima, partial differentiation and reciprocity relations, Integration of some useful/relevant functions; permutations and combinations, Factorials, Probability.	1	15
	B Computers: General introduction to computers, different components of a computer, input-output devices, hardware and software; binary numbers system Bits and Bytes : Computer languages(High level and low level), DOS (Disk operating systems). Introduction to Internet, World Wide Web() and Web Browsers, Search Engine, Using e-governance web site.		

INTERNAL ASSESSMENT

Attendance :5 Marks
marks

Assignment/Presentation :5 Marks

Midterm Examination :15

TRANSACTIONAL STRATEGIS

Lectures, tutorials. demonstrations, teaching tools like pictures, chart, real and virtual laboratory etc.

LEARNING OUTCOMES:

After completion this course students will be able to understand and explain why the chemistry is an integral activity part of for addressing social, economic, environmental and human welfare.

Students can understand safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.

Students will be able to functions member of an interdisciplinary problem-solving team.

REFERENCES:

- Graduate chemistry, Inorganic chemistry by Purai, Sharma, Klia and Kaushal; Vishal publication
- Physical chemistry by puri, sharma, Kalia and pathania , Vishal publication.
- Modern organic chemistry by M.K. jainand S.C. Sharma, New age international publication.
- Computer fundamentals by Pradeep K. Sinha & Priti Sinha, Sixth edition, BPB Publication.

mala

Prof. D. Ray
online

Prof. Balisam
online course