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| Month | Chapter | Period | Activity topics | | | PT | c.w/h.w/n.b | Subject enrichment | T1 | T2 | T3 |
| April | CHAPTER 1 – Some Basic Concepts of Chemistry | 12 | General Introduction: Importance and scope of Chemistry. Nature of matter, laws of chemical combination, Dalton’s atomic theory: concept of elements, atoms and molecules. Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry. | | |  | Oral question base on solution(mcq) | Activity Assignment related to topic and differences between concepts | 7 | 7 | 7 |
| CHAPTER 2 – Structure of Atom | 8 | Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson’s model and its limitations. Rutherford’s model and its limitations, Bohr’s model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie’s relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d orbitals, | | |  | Oral test activity base on Structure of Atom (mcq) | Activity related to Structure of Atom | 9 | 9 | 9 |
| Practical | 4 | Determination of melting point of an organic compound . Determination of boiling point of an organic compound. | | |  |  |  |  |  |  |
| May | CHAPTER 2 – Structure of Atom | 6 | Rules for filling electrons in orbitals – Aufbau principle, Pauli’s exclusion principle and Hund’s rule, electronic configuration of atoms, stability of half-filled and completely filled orbitals. | | |  |  |  |  |  |  |
|  | CHAPTER 3 - Classification of elements and periodicities | 8 | Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100. | | |  | Oral test related to the periodic table | Activity characteristics test of all atom in periodic table | 6 | 6 | 6 |
|  | Practical | 3 | Crystallization involving an impure sample of any one of the following: Alum, Copper Sulphate, Benzoic Acid. | | |  |  |  |  |  |  |
| June | CHAPTER 4- Chemical Bonding and Molecular Structure | 14 | Valence electrons, ionic bond, covalent bond, bond parameters, Lewis structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept of hybridization, involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homo-nuclear diatomic molecules , Hydrogen bond. | | |  |  |  | 7 | 7 | 7 |
|  | Practical |  | Determination of pH of some solutions obtained from fruit juices, solutions of known and varied concentrations of acids, bases and salts using pH paper or universal indicator. | | |  |  |  |  |  |  |
| July | CHAPTER 5  – Chemical Thermodynamics | 16 | Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics – internal energy and enthalpy, measurement of U and H, Hess’s law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics  Introduction of entropy as a state function, Gibb’s energy change for spontaneous and nonspontaneous processes. Third law of thermodynamics | | |  | Oral question & work related to transfer of heat and energy, | Activity discuss the basics information of transfer of heat and energy, how heat is transfer from one medium to another medium . | 9 | 9 | 9 |
|  | CHAPTER VI – Equilibrium | 10 | Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium – Le Chatelier’s principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization,  ionization of poly basic acids, acid strength, concept of pH, hydrolysis of salts (elementary idea), buffer solution, Henderson Equation, solubility product, common ion effect (with illustrative examples). | | |  | Oral question & note book related to acid and bases and salts | Activity Assignment related to the topic and discuss related to acid , base and salts | 7 | 7 | 7 |
| August | Practical | 4 | Study of pH change by common-ion effect in case of weak acids and weak bases. | | | 12.08.24 |  |  |  |  |  |
|  | CHAPTER VII – Redox Reactions | 6 | Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions. | | |  | Oral question & work related to topic | Activity Assignment related to the topic and discuss the basics information & concept related to topic | 4 | 4 | 4 |
|  | Practical | 4 | Preparation of standard solution of oxalic acid. | | | 12.08.24 |  |  |  |  |  |
| August  September |  |  | Revision and exam of 1st term | | |  |  |  |  |  |  |
| October | CHAPTER VIII – Organic Chemistry: Some basic Principles and Techniques | 14 | General introduction, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions. | | |  | Oral question & work related to the IUPAC nomenclature of organic compounds. | Activity characteristics discuss related to organic compound & reaction | 11 | 11 | 11 |
|  | Practical | 5 | Determination of strength of a given solution of sodium hydroxide by titrating it against standard solution of oxalic acid.  Preparation of standard solution of sodium carbonate. | | |  |  |  |  |  |  |
| November | CHAPTER IX – Hydrocarbons | 12 | Classification of Hydrocarbons  Aliphatic Hydrocarbons:  Alkanes – Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions.  Alkenes – Nomenclature, structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov’s addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition.  Alkynes – Nomenclature, structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of – hydrogen, halogens, hydrogen halides and water.  Aromatic Hydrocarbons:  Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft’s alkylation and acylation, directive influence of functional group in mono-substituted benzene. Carcinogenicity and toxicity. | | |  | Oral question , note book & work related to the Alkane, Alkenes, Alkynes | Activity Assignment related to the topic and discuss the basics information & concept related to topic. | 10 | 10 | 10 |
| November | Practical | 4  6  3 | Determination of strength of a given solution of hydrochloric acid by titrating it against standard sodium carbonate solution.  (a) Determination of one anion and one cations in a given salt.  Cations: Pb2+, Cu2+, As3+, Al3+, Fe3+, Mn2+ , Zn2+, Co2+, Ni2+, Ca2+, Sr2+, Ba2+, Mg2+, NH4+  Anion: (CO3)2‒, S2‒, (SO3)2‒, (NO2)‒, Cl‒, I‒, PO43‒, (C2O4)2‒, CH3COO‒, NO3– (Note: Insoluble salts excluded)  (b) Detection of nitrogen, sulphur, chlorine, in organic compounds. | | |  |  |  |  |  |  |
| December |  |  | Pre-board exam/revision | | |  |  |  |  |  |  |
| January |  |  | Mock test | | | 06.01.25 |  |  |  |  |  |
| February |  |  | Mock test/revision | | |  |  |  |  |  |  |
| March |  |  | Board exam | | |  |  |  |  |  |  |
| MONDAY TEST   1. 15/7/2024 – CH – 1,2 2. 12/8/2024 – CH- 3,4 3. 21/10/2024 – CH – 5,6,7 4. 6/1/2025 – CH – 8,9 | | | | UNIT TEST  UNIT TEST 1 – CH – 1, 2  UNIT TEST 2 – CH –3, 4  UNIT TEST 3– CH –5, 6  UNIT TEST 4 – CH –7, 8, 9 | 1 ST TERM – CH -1, 2 , 3  MID TERM - CH – 4 , 5 , 6  YEARLY – PREVIOUS CHAPTER 40%  CH – 7, 8 , 9 60% | | | | | | |