**INDIAN SCHOOL AL WADI AL KABIR**

**DEPARTMENT OF SCIENCE 2017-18**

**WEEKLY PLAN-CLASS 12 -CHEMISTRY**

**Indian School Al Wadi Al Kabir - Syllabus break up for July 2017**

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| CLASS | I WEEK | II WEEK | III WEEK | IV WEEK | V WEEK |
|  |  |  |  | **24 - 27** | **30&31** |
| XII | . SUMMER HOLIDAYS | SUMMER HOLIDAYS | SUMMER HOLIDAYS | **UNIT 7 Contd..**  Dioxygen: preparation, properties and uses.oxides; ozone.  Sulphur –preparation, properties and uses ,sulphuric acid:  manufacture, properties and uses, oxoacids of sulphur  (structures only).  Group 17 elements-compounds of halogens: preparation, properties and uses. Interhalogen compounds, oxoacids of halogens (structures only). | Group 18 elements: General introduction, electronic configuration, occurrence, trends in physical  and chemical properties, uses.9  **UNIT 6**  **GENERAL PRINCIPLES AND PROCESSES OF ISOLATION**  Principles and methods of extraction – concentration, oxidation, reduction electrolytic method and  refining;  **PRACTICALS** :Core Experiments |

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| CLASS | I WEEK | II WEEK | III WEEK | IV WEEK | V WEEK |
|  | 1 -3 | **6 – 10** | **13 – 17** | **20 - 24** | **27 - 31** |
| XII | occurrence and principles of extraction of aluminium, copper, zinc and iron.  **UNIT XII**  **ALDEHYDES , KETONES AND CARBOXYLIC ACIDS**  Aldehydes and Ketones: Nomenclature. | Nature of carbonyl group, methods of preparation, physical  and chemical properties, and mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes;  uses.  Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical  properties; uses  . | **UNIT XIII**  **AMINES**  Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical  properties, uses, identification of primary secondary and tertiary amines.  Cyanides and Isocyanides – will be mentioned at relevant places in context.  Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry | **UNIT 3**  **ELECTROCHEMISTRY**  Redox reactions; conductance in electrolytic solutions, specific and molar conductivity variations of  conductivity with concentration, Kohlrausch’s Law, electrolysis and laws of electrolysis (elementary idea),  dry cell – electrolytic cells and Galvanic cells; lead accumulator, EMF of a cell, standard electrode potential,  Nernst equation and its application to chemical cells. Relation between Gibbs energy change and EMF of  a cell, fuel cells; corrosion. | .  . **UNIT 4**  **CHEMICAL KINETICS**  Rate of a reaction (average and instantaneous), factors affecting rates of reaction: concentration,  temperature, catalyst; order and molecularity of a reaction; rate law and specific rate constant,  **PRACTICALS** : Salt Analysis |

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| CLASS | I WEEK | II WEEK | III WEEK | IV WEEK | V WEEK |
|  |  | **3 - 7** | **10 – 14** | **17 - 21** | **24 - 28** |
| XII |  | integrated  rate equations and half life  concept of collision theory  Activation energy, Arrhenious equation.  **UNIT 8**  **d AND f BLOCK ELEMENTS**  General introduction ,electronic configuration, occurrence and characteristics of transition metals,  general trends in properties of the first row transition metals – metallic character, ionization enthalpy,  oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy  formation. Preparation and properties of K2Cr2O7  and KMnO4  **PRACTICALS** : Salt analysis | Lanthanoids – electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction  and its consequences.  Actinoids – Electronic configuration, oxidation states and comparison with lanthanoids | ASSESSMENT – 1 | ASSESSMENT - 1 |

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| CLASS | I WEEK | II WEEK | III WEEK | IV WEEK | V WEEK |
|  | 1 – 5 | **8 – 12** | **15 - 19** | **22 - 26** | **29 - 31** |
| XII | **UNIT 9**  **COORDINATION COMPOUNDS**  Coordination compounds : Introduction, ligands, coordination number, colour, magnetic properties  and shapes, IUPAC nomenclature of mononuclear coordination compounds, bonding, Werner’s theory  VBT,CFT; isomerism (structural and stereo) | importance of coordination compounds (in qualitative analysis,  extraction of metals and biological systems).  **UNIT 5**  **SURFACE CHEMISTRY**  Adsorption – physisorption and chemisorption; factors affecting adsorption of gases on solids; catalysis  :homogenous and heterogeneous,  colloids;  properties of colloids; | activity and selectivity: enzyme catalysis; colloidal state: distinction between  true solutions, colloids and suspensions; lyophillic, lyophobic multimolecular and macromolecular  Tyndall effect, Brownian movement, electrophoresis, coagulation; emulsions – types  of emulsions. | **UNIT 14**  **BIOMOLECULES**  Carbohydrates – Classification (aldoses and ketoses), monosaccharide (glucose and fructose), D-L  configuration, oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen):  importance.  Proteins - Elementary idea of a - amino acids, peptide bond, polypeptides, proteins, primary structure,  secondary structure, tertiary structure and quaternary structure (qualitative idea only), | denaturation of  proteins; enzymes.  Hormones –Elementary idea (excluding structure).  Vitamins – Classification and functions.  Nucleic Acids: DNA and RNA  **UNIT 15**  **POLYMERS**  Classification – Natural and synthetic, methods of polymerization (addition and condensation),  copolymerization.  **PRACTICALS** : Salt Analysis |

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|  | 1 – 2 | **5 – 9** | **12 – 15** | **19 - 23** | **26 – 30** |
| XII | Some important polymers: natural and synthetic like polythene, nylon, polyesters, bakelite,  rubber. Biodegradable and non-biodegradable polymers. | **UNIT 16**  **CHEMISTRY IN EVERYDAY LIFE**  1. Chemicals in medicines – analgesics, tranquilizers, antiseptics, disinfectants, antimicrobials,  antifertility drugs, antibiotics, antacids, antihistamines.  2. Chemicals in food – preservatives, artificial sweetening agents, elementary idea of antioxidants.  3. Cleansing agents – soaps and detergents, cleansing action. | REVISION | REVISION | REVISION |