**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 physicaland chemical properties, uses.9**UNIT 6****GENERAL PRINCIPLES AND PROCESSES OF ISOLATION**Principles and methods of extraction – concentration, oxidation, reduction electrolytic method andrefining; **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, physicaland chemical properties, and mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes;uses.Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemicalproperties; uses. | **UNIT XIII****AMINES**Amines: Nomenclature, classification, structure, methods of preparation, physical and chemicalproperties, 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 ofconductivity 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 ofa 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 |  | integratedrate 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, alloyformation. Preparation and properties of K2Cr2O7 and KMnO4**PRACTICALS** : Salt analysis | Lanthanoids – electronic configuration, oxidation states, chemical reactivity and lanthanoid contractionand 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 propertiesand shapes, IUPAC nomenclature of mononuclear coordination compounds, bonding, Werner’s theoryVBT,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 betweentrue solutions, colloids and suspensions; lyophillic, lyophobic multimolecular and macromolecularTyndall effect, Brownian movement, electrophoresis, coagulation; emulsions – typesof emulsions. | **UNIT 14****BIOMOLECULES**Carbohydrates – Classification (aldoses and ketoses), monosaccharide (glucose and fructose), D-Lconfiguration, 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 ofproteins; 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 |