**INDIAN SCHOOL AL WADI AL KABIR**

**DEPARTMENT OF SCIENCE 2016 - 17**

**WEEKLY PLAN - CLASS 12 –CHEMISTRY**

Indian School Al Wadi Al Kabir - Syllabus break up for August2015

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| **Class** | **Week1** | **Week2** | **Week3** | **Week4** | **Week 5** |
| XII | Lanthanoids - Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences. Actinoids - Electronic configuration, oxidation states and comparison with lanthanoids.  **Unit IX: Coordination Compounds 12 Periods** Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. | Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, importance of coordination compounds (in qualitative inclusion, extraction of metals and biological system).  **Unit I: Solid State -10 Periods** Classification of solids based on different binding forces: molecular, ionic, covalent and metallic solids, amorphous and crystalline solids (elementary idea). Unit cell in two dimensional and three dimensional lattices, calculation of density of unit cell. | efficiency, voids, number of atoms per unit cell in a cubic unit cell, point defects, electrical and magnetic properties. Band theory of metals, conductors, semiconductors and insulators and n and p type semiconductors.  **Unit II: Solutions 10 Periods**  Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties - relative lowering of vapour pressure | Raoult's law, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor. | **Unit III: Electrochemistry**  **12 Periods**  Redox reactions, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, EMF of a cell, standard electrode potential, |

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| **Class** | **Week1 and 2** | **Week 3** | **Week 4** | **Week 5** |
| XII | Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, fuel cells, corrosion.  **Unit IV: Chemical Kinetics 10 Periods** Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant,integrated rate equations and half life (only for zero and first order reactions) | Concept of collision theory (elementary idea, no mathematical treatment). Activation energy, Arrhenious equation.  **Unit V: Surface Chemistry 08 Periods** Adsorption - physisorption and chemisorption, factors affecting adsorption of gases on solids, catalysis, homogenous and heterogenous activity and selectivity; enzyme catalysis colloidal state distinction between true solutions, colloids and suspension; lyophilic, lyophobic multi-molecular and macromolecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation, emulsion - types of emulsions. | ASSESSMENT II | ASSESSMENT II |

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| **Class** | **Week1** | **Week2** | **Week3** | **Week4** |
| XII | **Unit VI: General Principles and Processes of Isolation of Elements -08 Periods** Principles and methods of extraction - concentration, oxidation, reduction - electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron. | **Unit XVI: Chemistry in Everyday life 06 Periods** Chemicals in medicines - analgesics, tranquilizers antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines. Chemicals in food - preservatives, artificial sweetening agents, elementary idea of antioxidants. Cleansing agents- soaps and detergents, cleansing action.  Chemicals in food - preservatives, artificial sweetening agents, elementary idea of antioxidants. Cleansing agents- soaps and detergents, cleansing action. | **Unit XIV: Biomolecules 12 Periods** Carbohydrates - Classification (aldoses and ketoses), monosaccahrides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates. | Proteins -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure. Vitamins - Classification and functions. Nucleic Acids: DNA and RNA. |

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| **Class** | **Week1** | **Week2** | **Week3** | **Week4** |
| XII | **Unit XV: Polymers 08 Periods** Classification - natural and synthetic, methods of polymerization (addition and condensation), copolymerization, some important polymers: natural and synthetic like polythene, nylon polyesters, bakelite, rubber. Biodegradable and non-biodegradable polymers. | REVISION OF SAMPLE /BOARD PAPERS | REVISION OF SAMPLE /BOARD PAPERS | REVISION OF SAMPLE /  BOARD PAPERS |

Indian School Al Wadi Al Kabir - Syllabus break up for December2015

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| **Class** | **Week1** | **Week2** | **Week3** | **Week4** |
| XII | Rehearsals Examination | Rehearsals Examination | Rehearsals Examination | Winter break |

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| MONTH OF JANUARY2017 | | | | |
| CLASS 12 | WEEK1 and2 | WEEK 3 | WEEK 4 | WEEK 5 |
| CHEMISTRY | **Winter Break** | **Second Rehearsal Examination** | **Second Rehearsal Examination** | **Second Rehearsal Examination** |

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| MONTH OF FEBRUARY2017 | | | | |
| CLASS 12 | WEEK1 | WEEK2 | WEEK3 | WEEK4 |
| CHEMISTRY | **Practical Examination** | **CBSE Practical Examination** | **Revision** | **Revision** |