ACADEMIC SESSION 2018-19 : COURSE PLANNING

Course Program Name - XII ABHILASHA	Course Code - RDJEE	Course Duration - 900 Hrs

TARGET EXAM - JEE MAIN / ADVANCED / KVPY / SCRA / CBSE Board Exam

Course Commencement : 07.03.2018 | **Subject - Chemistry**

S.No	No. of week	Week Duration	No. of Classes	Topic(s) Name (No. of Lectures)	Sub-topic(s) Name (No. of Lectures)
1	**W1**	07.03.2018 To 10.03.2018	4	solid state	1. Introduction 2.Classification of solids based on different binding forces: molecular, ionic covalent and metallic solids 3.amorphous and crystalline solids 4.unit cell in two dimensional and three dimensional lattice 5.calculation of density of unit cell 6. packing in solids
2	**W2**	12.03.2018 To 17.03.2018	6	solid state	1. packing efficiency 2. voids 3.number of atoms per unit cell in a cubic unit cell 4. point defects 5. electrical and magnetic properties 6.Band theory of metals
3	**W3**	19.03.2018 To 24.03.2018	6	solid state	1.conductors 2.semiconductors and insulators 3.n and p type semiconductors 4. Applications 5.Applications 6.Applications
4	**W4**	26.03.2018 To 31.03.2018	6	Liquid solution	1.Types of solutions 2. expression of concentration of solutions of solids in liquids 3. solubility of gases in liquids 4. solid solutions, 5. colligative properties – relative lowering of vapour pressure, Raoult's law 6.elevation of B.P

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5	**W5**	02.04.2018 To 07.04.2018	6	Liquid solution	1. depression of freezing point 2. osmotic pressure 3.determination of molecular masses using colligative properties 4.abnormal molecular mass 5. Vant Hoff facto 6.Exercise and application
6	**W6**	09.04.2018 To 14.04.2018	6	Electrochemistry	1.Redox reactions 2.; conductance in electrolytic solutions 3.specific and molar conductivity 4. variations of conductivity with concentration 5. Kohlrausch's Law 6.electrolysis and laws of electrolysis
7	**W7**	16.04.2018 To 21.04.2018	6	Electrochemistry	1.dry cell – electrolytic cells 2.d Galvanic cells 3. lead accumulator, 4.EMF of a cell 5. standard electrode potential 6.Nernst equation and its application to chemical cells
8	**W8**	23.04.2018 To 28.04.2018	6	Electrochemistry	1. Relation between Gibbs energy change and EMF of a cell 2. fuel cells 3. corrosion. 4.concentraion cell 5.Exercise and application 6.Exercise and application

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9	**W9**	30.04.2018 To 05.05.2018	6	Chemical Kinetics	1.Rate of a reaction (average and instantaneous) 2. factors affecting rates of reaction 3. order and molecularity of a reaction 4.rate law and specific rate constant 5.integrated rate equations and half life (zero order) 6.integrated rate equations and half life (first order)
10	**W10**	07.05.2018 To 12.05.2018	6	Chemical Kinetics	1. concept of collision theory 2.Activation energy 3. Arrhenious equation. 4. Exercise and application 5.Exercise and application 6.Exercise and application
11	**W11**	14.05.2018 To 19.05.2018	6	Coordination Compounds	1.Coordination compounds : Introduction 2. ligands 3. coordination number 4. colour, magnetic properties and shapes 5. IUPAC nomenclature of mononuclear coordination compounds 6. bonding
12	**W12**	21.05.2018 To 03.06.2018			**Summer vacation**
13	**W13**	04.06.2018 To 09.06.2018	6	Coordination Compounds	1.Werner's theory VBT,CFT 2.isomerism (structural and stereo 3.importance of coordination compounds 4. CFSE 5.Exercise and application 6.Exercise and application

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14	**W14**	11.06.2018 To 16.06.2018	6	Surface Chemistry	1.Adsorption – physisorption and chemisorption 2. factors affecting adsorption of gases on solids; 3.catalysis :homogenous and heterogeneous 4. activity and selectivity 5. enzyme catalysis 6. colloidal state
15	**W15**	18.06.2018 to 23.06.2018	6	Surface Chemistry	1.distinction between true solutions 2., colloids and suspensions 3. lyophillic, lyophobic multimolecular and macromolecular colloids 4.properties of colloids; Tyndall effect, Brownian movement, 5. electrophoresis, coagulation; emulsions 6.types of emulsions
16	**W16**	25.06.2018 to 30.06.2018	6	Metallurgy	1.Principles and methods of extraction 2. concentration 3. oxidation 4. reduction electrolytic method 5.refining 6. occurrence and principles of extraction of aluminium,
17	**W17**	02.07.2018 to 07.07.2018	6	Metallurgy	1.copper 2. zinc 3.Iron 4.silver, gold 5.Magnesium 6.Applications
18	**W18**	09.07.2018 to 14.07.2018	6	Alkyl Halides and Aryl Halides	1.Haloalkanes: Nomenclature 2. nature of C-X bond 3.physical and chemical properties 4.physical and chemical properties 5.mechanism of substitution reactions (SN1 and SN2) 6. Elimination reaction (E1 and E2)

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19	**W19**	16.07.2018 to 21.07.2018	6	Alkyl Halides and Aryl Halides	1.Haloarenes: Nature of C-X bond 2.substitution reactions 3.substitution reactions (continue..) 4.Uses and environmental effects of – dichloromethane, trichloromethane, tetrachloromethane 5. iodoform, freons, DDT 6. Applications
20	**W20**	23.07.2018 to 28.07.2018	6	Alcohols, Phenols and Ethers	1.Alcohols: Nomenclature, 2. methods of preparation 3.methods of preparation 4. physical and chemical properties 5. identification of primary, secondary and tertiary alcohols; 6.mechanism of dehydration, uses, with special reference to methanol and ethanol.
21	**W21**	30.07.2018 to 04.08.2018		Alcohols, Phenols and Ethers	1. Some chemical reactions of alcohols 2.Phenols : Nomenclature 3.methods of preparation 4. physical and chemical properties 5. acidic nature of phenol 6. electrophillic substitution reactions,
22	**W22**	06.08.2018 to 11.08.2018	6	Alcohols, Phenols and Ethers	1.uses of phenols. 2.Ethers : Nomenclature, 3. methods of preparation 4.physical and chemical properties 5.uses. Of ethers 6.Applications
23	**W23**	13.08.2018 to 18.08.2018	6	Aldehydes & Ketones	1.Aldehydes and Ketones: Nomenclature, 2. nature of carbonyl group 3.methods of preparation 4. physical and chemical properties 5. mechanism of nucleophilic addition, **INDEPENDENT DAY**

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24	**W24**	20.08.2018 to 25.08.2018	6	Aldehydes & Ketones	1.reactivity of alpha hydrogen in aldehydes 2. Reactions of aldehdes and ketones 3.Reactions of aldehdes and ketones 4.Reactions of aldehdes and ketones 5.Reactions of aldehdes and ketones 6.Tests for aldehydes and ketones
25	**W25**	27.08.2018 to 01.09.2018	6	Aldehydes & Ketones + Carboxylic Acids	1.Applications and exercise 2.Nomenclature 3. acidic nature 4.methods of preparation 5. physical properties 6. chemical properties
26	**W26**	03.09.2018 to 08.09.2018	6	Carboxylic Acids	1.Reactions of carboxylic acid 2.Reactions of carboxylic acid 3.Reactions of carboxylic acid 4.Reactions of carboxylic acid 5.Tests for carboxylic acid 6.Uses
27	**W27**	10.09.2018 to 15.09.2018	6	Amines	1.Amines: Nomenclature, classification 2.structure, methods of preparation 3.physical properties 4. chemical properties and uses 5. chemical reactions of amines 6.chemical reactions of amines
28	**W28**	17.09.2018 to 22.09.2018	6	Amines	1. identification of primary secondary and tertiary amines 2.Cyanides and Isocyanides 3.Diazonium salts: Preparation, 4. chemical reactions 5. importance in synthetic organic chemistry 6. Applications
29	**W29**	24.09.2018 to 29.09.2018	6	Biomolecules	1.Carbohydrates – Classification (aldoses and ketoses) 2.monosaccharide (glucose and fructose) 3. D-L configuration

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30	**W30**	01.10.2018 to 06.10.2018	6	Biomolecules	1.Proteins - Elementary idea of a - amino acids 2.peptide bond, polypeptides, protein 3. primary structure, secondary structure, tertiary structure and quaternary structure (qualitative idea only) 4. denaturation of proteins; enzymes. 5.Hormones –Elementary idea 6.Vitamins – Classification and functions. Nucleic Acids: DNA and RNA
31	**W31**	08.10.2018 to 13.10.2018	6	Polymers	1.Classification – Natural and synthetic 2.methods of polymerization 3.copolymerization 4. Some important polymers 5. natural and synthetic like polythene, 6.nylon, polyesters, bakelite, rubber. Biodegradable and non-biodegradable polymers.
32	**W32**	15.10.2018 to 20.10.2018 19 OCT VIJAYDASHMI	6	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.Continue.. 4.Cleansing agents – soaps and detergents, cleansing action 5. Applications **VIJAYDASHMI**
33	**W33**	22.10.2018 to 27.10.2018	6	P Block Elements	1.Group 15 elements 2.Continue.. 3.Group 16 elements 4. Continue 5.Group 17 elements 6.continue
34	**W34**	29.10.2018 to 03.11.2018	6	P Block/ D block and F block Elements	1.Group 18 element 2.continue 3.Exercises and applications of p block elements 4. D & F Block - General introduction ,electronic configuration, occurrence and characteristics of transition metals 5.general trends in properties of the first row transition metals 6.metallic character, ionization enthalpy,oxidation states, ionic radii, colour, catalytic property, magnetic properties, interstitial compounds, alloy formation.

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35	**W35**	04.11.2018 to 11.11.2018 07 NOV DEEPAWALI			**Diwali**
36	**W36**	12.11.2018 to 17.11.2018	6	D block and F block Elements	1. Preparation and properties of K2Cr2O7 and KMnO4 2.Lanthanoids – electronic configuration, oxidation states, 3.chemical reactivity and lanthanoid contraction and its consequences 4.Actinoids – Electronic configuration 5., oxidation states and comparison with lanthenoids 6.Applications
37	**W37**	19.11.2018 to 24.11.2018			
38	**W38**	26.11.2018 to 01.12.2018			
39	**W39**	03.12.2018 to 08.12.2018			
40	**W40**	10.12.2018 to 15.12.2018			
41	**W41**	17.12.2018 to 22.12.2018			
42	**W42**	24.12.2018 to 29.12.2018 25 DEC CHRISTMAS			**CHRISTMAS**

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43	**W43**	02.01.2019 to 05.01.2019			
44	**W44**	07.01.2019 to 12.01.2019			