SVKM International School, Mumbai
Long Term Plan for CIE A Level
SCHEME OF WORK
Batch: 2018-20

Teacher: Mr. Manoj Kapoor **Subject: Chemistry**

Week and Month	Topic	Sub topics &Learning Outcomes	Teaching activities / Integration of ICT components	Assessment Summative / formative	Course work / practical component	Resources
JULY (3 Week)	**15. Hydrocarbons** **17. Hydroxy compounds**	14.1 Formulae, functional groups and the naming of organic compounds 15.1 Revision of Alkanes 15.2 Revision of Alkenes 15.4 Arenes 17.1 Alcohols Revision 17.2 Phenol	Use of Ppts. Videos related to Benzene and its reaction mechanism.	1. Worksheets 2. Class Tests after each of the topics are completed. 3. Solving topics related questions from past papers	Practical Based on Analysis of Aromatic compounds.	Hill Practical 34 Lainchbury Experiment 8.3 Past Paper Paper 42, June 2013, Q3 (d) **Online**: www.chemguide.co.uk http://www.rsc.org/learn-chemistry/resource/res00000286/organic-molecules-day **Online:** http://www.rsc.org/learnchemistry/resource/res00000559/the-microscale-synthesis-of-azo-dyes www.chemguide.co.uk
AUGUST (4 Weeks)	**19. Carboxylic acids and its derivatives**	19.1 Carboxylic acids 19.2 Acyl chlorides 19.2 Esters Revision	Use of Ppts. Videos related to Chemical	1. Worksheets 2. Class Tests after each of the		

	7. Equilibria	7.1 Chemical equilibria: reversible reactions, dynamic equilibrium 7.2 Ionic equilibria 7.3 Partition coefficients	equilibrium and its applications.	topics are completed. 3. Solving topics related questions from past papers		
SEPTEMBER (4 Weeks)	**20 Nitrogen compounds**	20.1 Primary amines 20.2 Amides 20.3 Amino acids	Use of Ppts for Amines. Videos related to Amino acids classification and its applications.	1. Worksheets 2. Class Tests after each of the topics are completed. 3. Solving topics related questions from past papers		**Online** http://www.youtube.com/watch?v=oRn7kTiqfaA
OCTOBER (3 Weeks)	**21 Polymerisation** **5. Chemical energetics**	21.1 Condensation polymerization 21.2 Predicting the type of polymerization 21.3 Properties of polymers 21.4 Degradable polymers 5.1 Enthalpy change, ΔH Revision 5.2 Hess' Law, including Born-Haber cycles Revision 5.3 Entropy change, ΔS 5.4 Gibbs free energy change, ΔG	Use of Ppts. Videos related to polymerization and its applications.	1. Worksheets 2. Class Tests after each of the topics are completed. 3. Solving topics related questions from past papers		**Textbooks** Hill Practical 35 **Online** http://www.rsc.org/learn-chemistry/resource/res00000755/making-nylon-the-nylon-rope-trick www.chemguide.co.uk http://www.rsc.org/learn-chemistry/resource/res00000385/identifying-polymers http://www.rsc.org/learn-chemistry/resource/res00000756/pva-polymer-slime

NOVEMBER (3 Weeks)	**22 analytical techniques**	22.1 Chromatography 22.2 Infra-red spectroscopy 22.3 Mass spectrometry 22.4 Carbon-13 NMR spectroscopy 22.5 Proton (1H) NMR spectroscopy	Use of Ppts. Videos related to Mass Spectra, IR & NMR spectra and its applications.	1. Worksheets 2. Class Tests after each of the topics are completed. 3. Solving topics related questions from past papers	Virtual Experimental analysis of compound and its spectra.	RCS Spectra School. **Online** http://www.rsc.org/learn-chemistry/resource/res00001340/chemistry-vignettes-nmr-theory http://www.rsc.org/learn-chemistry/resource/rwq00000084/organicr008-analyzing-nmr-spectra **Past Papers** Paper 41, Nov 2012, Q7 (c) Paper 43, Nov 2012, Q7 (a) Paper 43, Nov 2013, Q8 (d)(ii)-(v)
DECEMBER (4 Weeks)	**12. An introduction to the chemistry of transition elements** **23 Organic synthesis**	12.1 General physical properties of the first row of transition elements, titanium to copper 12.2 General characteristic chemical properties of the first set of transition elements, titanium to copper 12.3 Colour of complexes 12.4 Stereoisomerism in transition element complexes 12.5 Stability constants, Kstab 23.1 Synthesis of chiral drug molecules 23.2 Synthetic routes	Use of Ppts. Videos related to Chemical equilibrium and its applications.	1. Worksheets 2. Class Tests after each of the topics are completed. 3. Solving topics related questions from past papers	**Textbooks** Lainchbury Experiment 11.6	**Online** http://www.rsc.org/learn-chemistry/resource/res00000116/afl-transition-metal-complexes **Online** http://www.rsc.org/learn-chemistry/resource/res00000658/cobalt-complexes **Online** http://www.rsc.org/learn-chemistry/resource/res00000849/synthesis-and-analysis

JANUARY **(4 Weeks)**	**6. Electrochemistry** **8. Reaction kinetics**	6.1 Redox processes: electron transfer and changes in oxidation number (oxidation state) 6.2 Electrolysis 6.3 Standard electrode potentials $E^{\ominus}$; standard cell potentials $E^{\ominus}$cell and the Nernst equation 6.4 batteries and fuel cells 8.1 Simple rate equations, orders of reaction and rate constants 8.2 Effect of temperature: on reaction rates and rate constants and the concept of activation energy 8.3 Homogeneous and heterogeneous catalysts including enzymes Followed by Revisions & Past paper Solving	Use of Ppts. Videos related to Chemical equilibrium and its applications.	1. Worksheets 2. Class Tests after each of the topics are completed. 3. Solving topics related questions from past papers		**Textbooks** Lainchbury Experiment 9.4 & 9.5 Hill Practical 15 **Online** http://www.rsc.org/learn-chemistry/resource/res00000567/finding-the-rate-expression-for-the-reaction-between-iodine-and-tin http://www.rsc.org/learn-chemistry/resource/res00000598/a-chemical-stop-clock-iodine-clock-reaction **Past Papers** Paper 41, June 2013, Q2 (a) Paper 42, June 2013, Q1 (b) Online http://www.rsc.org/learn-chemistry/resource/res00000743/the-effect-of-concentration-on-reaction-rate
FEBRUARY **(4 Weeks)**	**Revision & Mock Exams**					

MARCH	**Board Exams**					
APRIL						