PO LEUNG KUK CENTENARY LI SHIU CHUNG MEMORIAL COLLEGE
TEACHING SCHEDULE
2023/2024

FORM: 4
SUBJECT: CHEMISTRY
TEXTBOOK: NEW CHEMISTRY A MODERN VIEW ARISTO

Cycle no.	Dates	Syllabus to be covered	Remarks
1	4/9 – 12/9	-laboratory safety (1) -revision of topics on form 3 (4) -quiz on form 3 (1)	
2	13/9 – 20/9	-Unit 9 Structure, bonding and properties (6) 9.1 A look at the structures of some substances 9.2 Giant ionic structures 9.3 Properties of Ionic compounds 9.4 Giant covalent structures 9.5 Properties of substances with giant covalent structures 9.6 Applications of graphite 9.7 Simple molecular structures 9.8 Properties of substances with simple molecular structures	
3	21/9 - 28/9	-Unit 9 Structure, bonding and properties (5) 9.9 Giant metallic structures 9.10 Properties of metals 9.11 Predicting the properties of substances 9.12 Predicting the structure of a substance from its properties -Test on Unit 9 (1)	
4	29/9 – 9/10	-Unit 10 Occurrence and extraction of metals(6) 10.1 Metals in our daily lives 10.2 Uses of metals and their properties 10.3 Metals in the Earth's crust 10.1 Occurrence of metals in nature and their extraction methods# 10.5 Year of discovery of metals and the ease of extraction 10.6 How long will metal resources last?# 10.7 The life cycle of metals# 10.8 Importance of recycling# 10.9 Conservation of metal resources#	
5	10/10 – 17/10	-Unit 13 Corrosion of metals and their protection (5) 13.1 What is corrosion? 13.2 Corrosion of iron: rusting -Activity 13.1 (1) 13.3 What factors speed up the rusting process 13.4 To observe rusting using a rust indicator 13.5 How to prevent rusting? 13.6 Socioeconomic implications of rusting 13.7 What is the most suitable method to protect a particular iron article from rusting? 13.8 Corrosion resistance of aluminium	

Topic related to National Security Education

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6	18/10 – 1/11	-Activity 13.2 (1) -Unit 12 Reacting masses (4) 12.1 Calculating the amounts of substances 12.2 Counting numbers by weighing 12.3 What is a mole? 12.4 What is molar mass? 12.5 Calculations involving moles and masses -Test on Unit 13 (1)	1st UT week
7	2/11 – 13/11	-Unit 12 Reacting masses (6) 12.6 Percentage by mass of an element in a compound 12.7 Determining the empirical formula of a compound from experimental data 12.8 Mole ratio in a balanced equation 12.9 Chemical equations and reacting masses 12.10 Limiting reactants 12.11 Theoretical yield and actual yield	
8	14/11 - 21/11	-Unit 14 Looking at acids and alkalis (5) 14.1 Acids in our daily lives 14.2 Acids in the laboratory 14.6 Bases and alkalis 14.7 Alkalis in the home 14.8 Alkalis in the laboratory 14.3 Characteristics of dilute acids -Activity 14.1 (1)	
9	22/11 – 29/11	-Unit 14 Looking at acids and alkalis (5) 14.4 The role of water for acids 14.5 Basicity of an acid 14.9 Characteristics of solutions of alkalis 14.10 The role of water for alkalis 14.11 An introduction to analytical chemistry 14.12 Concentrated acids 14.13 Corrosive nature of concentrated acids and alkalis 14.14 Hygroscopic and deliquescent substances -Activity 14.3 (1)	
10	30/11 – 8/12	-Test on acids and alkalis (1) -Unit 15 Molarity, pH scale and strengths of acids and alkalis (4) 15.1 Concentration of a solution 15.2 The pH scale 15.3 Determining pH values of solutions 15.4 Strong and weak acids 15.5 Comparing the strengths of acids 15.6 Strong and weak alkalis 15.7 Comparing the strengths of alkalis 15.8 Strength versus concentration -Unit 16 Neutralization (1) 16.1 Acid-base reactions 16.2 Heat change during neutralization 16.3 Formation of salts	
11	12/12 – 18/12	-Unit 16 Neutralization (4) 16.4 Naming of salts 16.5 Soluble and insoluble salts 16.8 Preparation of insoluble salts 16.6&7 Preparation of soluble salts 16.9 Uses of neutralization	

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	3/1 - 16/1	**First examination**	1st exam
12	19/12 – 19/1	-Unit 17 Concentration of solutions and VA (3) 17.2 Dilution 17.3 Volumetric analysis 17.4 Preparing a standard solution of an acid/alkali 17.5 Acid-alkali titration -Activity 17.1 (Demonstration and student experiment) (3)	
13	22/1 – 29/1	-Unit 17 Concentration of solutions and VA (3) 17.6 pH change during a titration 17.7 Using an indicator in an acid-alkali titration 17.8 Equivalence point detection by temperature change -Activity 17.2 (Demonstration and student experiment) (3)	
14	30/1 – 6/2	-Unit 17 Concentration of solutions and VA (5) 17.9 Application of acid-alkali titrations 17.10 Back titration -Test on Unit 17 (1)	
15	7/2 – 28/2	-Unit 20 Oxidation and Reduction (5) 20.1 Oxidation and reduction in terms of gains and loss of oxygen 20. 2 Oxidation and reduction in terms of gains and loss of hydrogen 20.3 Oxidation and reduction in terms of electron transfer 20.4 Oxidizing agent and reducing agent 20.5 Relative strength of reducing and oxidizing agents 20.6 Oxidation numbers 20.7 Using oxidation numbers to identify redox reactions 20.8 Using oxidation numbers to identify oxidizing and reducing agent in a redox reaction 20.9 Advantages and disadvantages of using the concept of oxidation number 20.10 The stock system of naming compounds -Activity 20.1 (1)	
16	29/2 – 12/3	-Unit 20 Oxidation and Reduction (4) 20.11 Chemical changes of common oxidizing and reducing agents 20.12 Balancing redox equations using ionic half-equations 20.13 Balancing redox equations using oxidation number method Test on Unit 20 (1) -Unit 18 Dry cells in daily life (1) 18.1 Electricity from chemical reactions	

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17	13/3 – 20/3	-Unit 18 Dry cells in daily life (4) 18.2 Different types of dry cells 18.3 Terms related to chemical cells 18.4 Zinc-carbon cell 18.5 Alkaline manganese cell 18.6 Silver oxide cell 18.7 Lithium ion cell 18.8 Nickel metal hydride (NiMH) cell 18.9 Lead-acid accumulator 18.10 Choosing a chemical cell for a particular use 18.11 Environmental impact of using chemical cells -Unit 19 Simple chemical cells (2) 19.1 Reactions in simple chemical cells 19.2 Simple chemical cells made from different metal couples 19.3 The electrochemical series of metals	
18	8/4 – 15/4	-Unit 19 Simple chemical cells (2) 19.4 Improving simple chemical cells 19.5 The role of a salt bridge 19.6 The Daniell cell -Activity 19.1 (1) -Activity 20.2 (1)	2nd UT week
19	16/4 – 23/4	Unit 21 Oxidation and reduction in chemical cells (6) 21.1 Oxidation and reduction in simple chemical cells 21.2 Redox reactions in a zinc-carbon cell 21.3 Redox reactions in simple chemical cells with inert electrodes 21.4 Fuel cell	
20	24/4 – 2/5	-Unit 20 Oxidation and Reduction (4) -20.14 The electrochemical series and the relative power of common oxidizing and reducing agents -20.15 Chlorine as an oxidizing agent -20.16 Nitric acid of different concentrations as oxidizing agents -20.17 Concentrated sulphuric acid as an oxidizing agent -20.18 Aqueous sulphur dioxide as a reducing agent -Unit 22 Electrolysis (2) 22.1 Electrolysis: chemical reactions from electricity 22.2 Comparing a chemical cell and an electrolytic cell 22.3 Electrolysis of molten sodium chloride using carbon electrodes	
21	3/5 – 10/5	Unit 22 Electrolysis (4) 22.4 Some knowledge related to aqueous electrolytes 22.5 Electrolysis of aqueous solutions of ionic compounds 22.6 Factors affecting the electrolysis of aqueous solutions 22.7 The position of ions in the electrochemical series and the order of discharge of ions 22.8 The effect of concentration of ions in the solution and the order of discharge of ions 22.9 The nature of electrodes and the order of discharge of ions Activity 22.1 (Demonstration) (2)	

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22	13/5 – 21/5	--Test on Unit 18, 19 20 and 21 (1) Unit 22 Electrolysis (3) 22.10 Industrial uses of electrolysis 22.11 Environmental impact of the electroplating industry 22.9 Methods to control pollution from the electroplating industry -Activity 22.4 (1) Activity 22.3 (1)	
23	22/5 – 29/5	Revision on covalent bonds and dative bonds (1) Unit 23 Shapes of molecules (5) 23.1 Covalent molecules with non-octet structures 23.2 Shapes of molecules of methane, ammonia and water 23.3 Shapes of other molecules 23.4 Influence of the nature of electron pairs on bond angles in molecules of methane, ammonia and water	
24	30/5 – 6/6	Revision	