

YEAR 9 A - F – CHEMISTRY

WEEK 27 (28th Feb to 4th March)

Work Sent to the students through Group email/ Google classroom

Topic:– SC6a– Covalent Bonds

Resources: Text book, Worksheet, Boardworks, GCSE science free lesson video, powerpoint.

Date	Lesson	Topic	Mode of Teaching	
28 th Feb Sunday (girls)	6	Learning Objective : Explain how a covalent bond is formed when a pair of electrons is shared between two atoms	Zoom	PPT / Video on Covalent Bonds
1 st March Monday (boys)	7	Success Criteria: <ul style="list-style-type: none"> • Define covalent bond • Differentiate between ionic and covalent bond 		
1 st March Monday (girls)	5	Learning Objective : Recall that covalent bonding results in the formation of molecules Success Criteria:	Zoom	PPT / Video on Covalent Bonds
1 st March Monday– (boys)	8	<ul style="list-style-type: none"> • Explain covalent bond is formed between non metal atoms • Predict some examples of covalent molecules. 		
1 st March Monday (girls)	6	Learning Objective : Explain the formation of simple molecular, covalent substances, using dot and cross diagrams, including a. hydrogen b. hydrogen chloride c. water d. methane e. oxygen f. carbon dioxide	GC	Worksheet SC6a
3 rd March Wednesday – (boys)	1	Success Criteria: <ul style="list-style-type: none"> • Describe the sharing of electrons takes place between the atoms involved in covalent bond. • Draw dot and cross diagram of some covalent molecule 		

YEAR 10 A/D/E–CHEMISTRY (girls)

WEEK 27 (28th Feb to 4th March)

Work Sent to the students through Google classroom

Topic: Reactivity

Resources: Text book, Worksheet, power point.

Date	Lesson	Topic	Mode of Teaching	
28/2/2021 Sunday	3	<p>Learning Objective: Deduce the relative reactivity of some metals, by their reactions with water, acids and salt solutions.</p> <p>Learning Outcome:</p> <ul style="list-style-type: none"> • What are the similarities and differences in the way different metals react with water, acids and salt solutions? • What happens to metal atoms when they react with water and acids? 	Zoom	Teacher uses powerpoint presentation to explain the reactions of some metals with water, acids and salt solutions.
3/3/2021 Wednesday	3	<p>Learning Objective: Explain displacement reactions as redox reactions, in terms of gain or loss of electrons.</p> <p>Learning Outcome:</p> <ul style="list-style-type: none"> • What is meant by displacement reactions? • Describe the reactions of metals with salt solutions. • Explain why displacement reactions are redox reactions. 	Zoom	Teacher uses powerpoint presentation to explain displacement reactions in terms of gain or loss of electrons.
4/3/2021 Thursday	2 3	<p>Learning Objective: Explain the reactivity series of metals (potassium, sodium, calcium, magnesium, aluminium, (carbon), zinc, iron, (hydrogen), copper, silver, gold) in terms of the reactivity of the metals with water and dilute acids and that these reactions show the relative tendency of metal atoms to form cations.</p> <p>Learning Outcome:</p> <ul style="list-style-type: none"> • Deduce the order of metals in the reactivity series from their reactions with water, acids and salt solutions. • Explain the reactivity series in terms of the tendency of different metal atoms to form cations. <p>Learning Objective: To answer the questions, on reactivity, in the worksheet</p> <p>Learning outcome: Students will be able to reinforce the concepts learned in the previous lesson by answering the questions in the worksheet.</p>	Zoom GC	Teacher uses powerpoint presentation that contains interactive questions on reactivity. Instruction will be given in the Google classroom to complete the Worksheet.

Home work: Solve S1 and E1 question :SC11a(Pg87)

YEAR 10 B/C/F–CHEMISTRY (Boys)

WEEK 27 (28th Feb to 4th March)

Work Sent to the students through Google classroom

Topic: Reactivity

Resources: Text book, Worksheet, power point.

Date	Lesson	Topic	Mode of Teaching	
28/2/2021 Sunday	0	Learning Objective: Deduce the relative reactivity of some metals, by their reactions with water, acids and salt solutions. Learning Outcome: <ul style="list-style-type: none">•What are the similarities and differences in the way different metals react with water, acids and salt solutions?• What happens to metal atoms when they react with water and acids?	Google Meet	Teacher uses powerpoint presentation to explain the reactions of some metals with water, acids and salt solutions.
1/3/2021 Monday	1&2	Learning Objective: 1. Explain displacement reactions as redox reactions, in terms of gain or loss of electrons. 2. Explain the reactivity series of metals (potassium, sodium, calcium, magnesium, aluminium, (carbon), zinc, iron, (hydrogen), copper, silver, gold) in terms of the reactivity of the metals with water and dilute acids and that these reactions show the relative tendency of metal atoms to form cations. Learning Outcome: <ul style="list-style-type: none">• What is meant by displacement reactions?• Describe the reactions of metals with salt solutions.• Explain why displacement reactions are redox reactions.	Google Meet	Teacher uses powerpoint presentation to explain displacement reactions in terms of gain or loss of electrons.
3/3/2021 Wednesday	4	Learning Objective: To answer the questions, on reactivity, in the worksheet. Learning outcome: Students will be able to reinforce the concepts learned in the previous lesson by answering the questions in the worksheet.	GC	Instruction will be given in the Google classroom to complete the Worksheet.

Home work: Solve S1 and E1 question :SC11a(Pg87)

YEAR 11 A/D/E – CHEMISTRY (Girls)

WEEK 27 (28th Feb to 4th March)

Work Sent to the students through Zoom Learning Platform / Google classroom

Topic:– SC24c: Condensation Polymerisation
SC24d: Problems with polymers

Resources: Text book, Worksheet, Boardworks powerpoint

Date	Topic	
28.02.21 Sunday 8 th period Mode of Teaching: GC	Learning Objective: Explain: a) why polyesters are condensation polymers b) how a polyester is formed when a monomer molecule containing two carboxylic acid groups is reacted with a monomer molecule containing two alcohol groups c) how a molecule of water is formed each time an ester link is formed Learning outcome: Differentiate between addition and condensation polymers.	Teacher uses powerpoint presentation with interactive questions
01.03.21 Monday 4 th period Mode of Teaching: Zoom	Learning Objective: Explain: polyesters formation. Learning outcome: Write chemical equations for the formation of condensation polymers. Understand why polyesters are condensation polymers Explain how a polyester is formed when a monomer molecule containing two carboxylic acid groups is reacted with a monomer molecule containing two alcohol groups Suggest how a molecule of water is formed each time an ester link is formed	Teacher uses powerpoint presentation with interactive questions
03.03.21 Wednesday 8 th period Mode of Teaching: Zoom	Learning Objective: Describe some problems associated with polymers including the: a availability of starting materials b persistence in landfill sites, due to non-biodegradability c gases produced during disposal by combustion d requirement to sort polymers so that they can be melted and reformed into a new product Learning outcome: Understand that addition polymers are non-biodegradable and evaluate the advantages and disadvantages of their disposal by landfill and incineration.	Teacher uses powerpoint presentation with interactive questions
04.03.21 Thursday 6 th Period Mode of Teaching: Zoom	Learning Objective: Evaluate the advantages and disadvantages of recycling polymers, including economic implications, availability of starting materials and environmental impact Learning outcome: Discuss few advantages and disadvantages of recycling plastics. Understands the need of developing biodegradable polymers.	Teacher uses powerpoint presentation with interactive questions
04.03.21 Thursday 6 th Period GC	Learning Objective: To answer the questions, on Condensation Polymerisation and Problem with polymers, in the worksheet. Learning outcome: Students will be able to reinforce the concepts learned in the previous lesson by answering the questions in the worksheet.	Worksheet assigned through GC.

HOMEWORK: Complete the textbook Qs of SC24c: Condensation Polymerisation
SC24d: Problems with polymers

YEAR 11 B/C/F – CHEMISTRY (Boys)

WEEK 27 (28th Feb to 4th March)

Work Sent to the students through Zoom Learning Platform / Google classroom

Topic:– SC24c: Condensation Polymerisation
SC24d: Problems with polymers

Resources: Text book, Worksheet, Boardworks powerpoint

Date	Topic	
28.02.21 Sunday 1 st Period Mode of Teaching: Zoom	Learning Objective: Explain: a why polyesters are condensation polymers b how a polyester is formed when a monomer molecule containing two carboxylic acid groups is reacted with a monomer molecule containing two alcohol groups c how a molecule of water is formed each time an ester link is formed Learning outcome: Differentiate between addition and condensation polymers.	Teacher shows a video and asks students to note the observations and draw conclusions
28.02.21 Sunday 2 nd Period Mode of Teaching: Zoom	Learning Objective: Explain the reaction of polyesters formation. Learning outcome: Write chemical equations for the formation of condensation polymers. Understand why polyesters are condensation polymers Explain how a polyester is formed when a monomer molecule containing two carboxylic acid groups is reacted with a monomer molecule containing two alcohol groups Suggest how a molecule of water is formed each time an ester link is formed	Teacher shows a video and asks students to note the observations and draw conclusions
01.03.21 Monday 3 rd Period Mode of Teaching: Zoom	Learning Objective: Describe some problems associated with polymers including the: a availability of starting materials b persistence in landfill sites, due to non-biodegradability c gases produced during disposal by combustion d requirement to sort polymers so that they can be melted and reformed into a new product Learning outcome: Understand that addition polymers are non-biodegradable and evaluate the advantages and disadvantages of their disposal by landfill and incineration.	Teacher uses powerpoint presentation with interactive questions
02.03.21 Tuesday 7 th Period Mode of Teaching: Zoom	Learning Objective: Evaluate the advantages and disadvantages of recycling polymers, including economic implications, availability of starting materials and environmental impact Learning outcome: Discuss few advantages and disadvantages of recycling plastics. Understands the need of developing biodegradable polymers.	Teacher uses powerpoint presentation with interactive questions

04.03.21 Thursday 4 th Period Mode of Teaching: GC	Learning Objective: To answer the questions, on Condensation Polymerisation and Problem with polymers, in the worksheet. Learning outcome: Students will be able to reinforce the concepts learned in the previous lesson by answering the questions in the worksheet.	Worksheet assigned through GC.
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HOMEWORK: Complete the textbook Qs of SC24c: Condensation Polymerisation
 SC24d: Problems with polymers

YEAR 11 G/H–CHEMISTRY (IGCSE)

WEEK 27 (28th Feb to 4th March)

Work Sent to the students through Zoom Learning Platform / Google classroom

Topic:– Synthetic polymers

Resources: Text book, Worksheet, IGCSE science free lesson video, power point.

Date	Topic	
28.02.2021 Sunday 6 th period Mode of Teaching: Zoom/ Google Meet	Learning Objective: Explain: a why polyesters are condensation polymers b how a polyester is formed when a monomer molecule containing two carboxylic acid groups is reacted with a monomer molecule containing two alcohol groups c how a molecule of water is formed each time an ester link is formed Learning outcome: Differentiate between addition and condensation polymers.	Teacher uses power point presentation with interactive questions.
01.03.2021 Monday 5 th period Mode of Teaching: Zoom/ Google Meet	Learning Objective: Explain: a why polyesters are condensation polymers b how a polyester is formed when a monomer molecule containing two carboxylic acid groups is reacted with a monomer molecule containing two alcohol groups c how a molecule of water is formed each time an ester link is formed Learning outcome: Write chemical equations for the formation of condensation polymers.	Teacher uses power point presentation with interactive questions

<p>02.03.2021</p> <p>Tuesday 1st period & 2nd period</p> <p>Mode of Teaching: Zoom/ Google Meet</p>	<p>Learning Objective: Describe some problems associated with polymers including the: a availability of starting materials b persistence in landfill sites, due to non-biodegradability c gases produced during disposal by combustion d requirement to sort polymers so that they can be melted and reformed into a new product</p> <p>Learning outcome: Understand that addition polymers are non-biodegradable and evaluate the advantages and disadvantages of their disposal by landfill and incineration.</p>	<p>Teacher uses power point presentation with interactive questions to teach the problems of polymers.</p>
	<p>Learning Objective: Evaluate the advantages and disadvantages of recycling polymers, including economic implications, availability of starting materials and environmental impact</p> <p>Learning outcome: Discuss few advantages and disadvantages of recycling plastics. Understands the need of developing biodegradable polymers.</p>	<p>Teacher uses power point presentation to understand the advantages and disadvantages of disposal methods.</p>
<p>04.03.2021</p> <p>Thursday 4th period</p> <p>Mode of Teaching: GC</p>	<p>Learning Objective: To answer the questions on Condensation polymers, in the worksheet.</p> <p>Learning outcome: Students will be able to reinforce the concepts learned in the previous lesson by answering the questions in the worksheet.</p>	<p>Worksheet assigned through GC.</p>

YEAR 12 D/G– CHEMISTRY

WEEK 27 (28th Feb to 4th March)

Work Sent to the students through Zoom Learning Platform / Google classroom

Topic 4 – CALCULATIONS

Resources: Text book, Worksheet, Video, Board works, power point

Date	Topic	
02.03.21 Tuesday 8 12D	Learning Objective: Atom economy at industrial level.	Teacher uses power point to show various steps of calculations .
01.03.21 Monday 6 12G	Learning Outcome: students will be able to: Comparison of atom economy for single step to multi step processes. Explain the need of high atom economy at industrial level. Select correct pathway to for manufacture of chemicals at industrial level with respect to high atom economy.	Lesson will be developed with many examples.
01.03.21 Monday 7- 12G	Learning Objective: empirical formula by combustion analysis Apply to large-scale industrial production – economic viability of process depends on cost and percentage yield of product.	Teacher uses power point presentation and videos to explain the concept of combustion analysis.
03.03.21 Wednesday 7- 12D	Learning Outcome: students will be able to: Be able to use experimental data to calculate i) empirical formulae from combustion analysis ii) molecular formulae including the use of $pV = nRT$ for gases and volatile liquids iii) calculate mole ratio and apply to synthesis the empirical formula. <i>Calculations of empirical formula may involve composition by mass or percentage composition by mass data.</i>	Teacher uses worksheet that based on combustion analysis.
03.03.21 Wednesday 8- 12D 1-12G	Learning Objective: applications of calculations to solve exam style questions Learning Outcome: students will be able to: Apply the cumulative concept of calculations , Select the correct steps to solve the given problems and suggest improvements in the lab procedure for various types of calculations.	Teacher uses questions from various past papers and worksheet- exam style questions from text book.
Mode of Teaching – Zoom		
Mode of Teaching – ZOOM		
Mode of Teaching – zoom		

HOMEWORK: Solve exam style questions from text book.

YEAR 12 G /D – CHEMISTRY

WEEK 27 (28th Feb to 4th March)

Work Sent to the students through Zoom Learning Platform / Google classroom

Topic:– Organic chemistry

Resources: Text book, Worksheet file, video, power point presentations.

Date	Topic	Mode of Teaching	
1.3.2021 Monday 3 12D	Learning Objective: 1.To differentiate saturated and unsaturated hydrocarbons. 2.To represent organic molecules using displayed formulae, molecular formulae, skeletal formulae, empirical formula and structural formulae. Learning outcome: <ul style="list-style-type: none">•What are hydrocarbons?• Give examples of saturated and unsaturated hydrocarbons• Give different types of formula for a given compound.	Zoom	Teacher uses powerpoint presentation on different types of formulae.
2.3.2021 Tuesday 1 12G	Learning Objective: Demonstrate an understanding that there are series of organic compounds characterized by a general formula and one or more functional groups. Learning outcome: <ul style="list-style-type: none">•What is meant by the terms homologous series and functional group.• Represent organic molecules using general formula.• Recall the general characteristics of homologous series.	Zoom	Teacher uses powerpoint presentation to explain functional groups and homologous series
2.3.2021 Tuesday 2 12G	Learning Objective: To answer the questions, on organic chemistry, in the worksheet. Learning outcome: Students will be able to recall and apply the concepts learned by solving worksheet questions.	GC	Instruction will be given in the Google classroom to complete the Worksheet.
3.3.2021 Wednesday 7 12D			

HOMEWORK: Solve textbook questions (pg171)

YEAR 13 A /B –CHEMISTRY

WEEK 27 (28th Feb to 4th March)

Topic: further organic chemistry.

Topic 19B: Nuclear magnetic resonance (NMR)

Work sent to the students through Google classroom / Zoom Learning Platform

Resources: Text book, Worksheets, video, power point presentations.

Date	Topic	
28.02.2021 Sunday 1-13A 4-13B Mode of Teaching – Zoom	Lesson Objective: Nuclear magnetic resonance (NMR) Introduction and basic information. Success Criteria: students will be able to: State that NMR spectroscopy involves interaction of materials with the low-energy radiowave region of the electromagnetic spectrum. Understand that ^{13}C NMR spectroscopy provides information about the positions of ^{13}C atoms in a molecule. Describe the use of tetramethylsilane, TMS, as the standard for chemical shift measurements	Teacher uses power point presentation that contains interactive questions. Students solve the worksheet file questions.
Sunday 28.02.2021 2-13 A 02.03.2021 Tuesday 2-13B Mode of Teaching – Zoom	Lesson Objective: Use the given chemical shift number of peaks in the compound due to the different environments. Success Criteria: students will be able to: be able to use data from ^{13}C NMR spectroscopy to: i predict the different environments for carbon atoms present in a molecule, given values of chemical shift, δ ii justify the number of peaks present in a ^{13}C NMR spectrum because of carbon atoms in different environments	Teacher uses power point presentation that contains interactive questions. Students solve the worksheet file questions.
Wednesday 03.03.21 4- 13A 2-13B Mode of Teaching – Zoom	Lesson Objective: Analyse a high resolution proton NMR spectrum of a simple molecule Success Criteria: students will be able to: i predict the different types of proton present in a molecule, given values of chemical shift, δ ii relate relative peak areas, or ratio numbers of protons, to the relative numbers of ^1H atoms in different environments	Teacher uses power point presentation that contains interactive questions that helps to predict the acid/basic nature and optical activity of amino acids. Students solve the worksheet file questions .

	<p>iii deduce the splitting patterns of adjacent, non-equivalent protons using the (n+1) rule and hence suggest the possible structures for a molecule</p> <p>iv predict the chemical shifts and splitting patterns of the ¹H atoms in a given molecule</p>	
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Homework : Solve worksheet file questions and text book.

YEAR 13 A/B– CHEMISTRY

WEEK 27 (28th Feb to 4th March)

Work Sent to the students through Zoom Learning Platform / Google classroom

Topic:– Gibbs Free Energy

Resources: Text book, Worksheet, Video , Board works , power point

Date	Topic	
28.02.21 Sunday 5 , 8 13B	<p>Learning Objective: Explain the entropy changes in different reactions.</p> <p>Learning Outcome: Understand why entropy changes to the system occur during</p> <ul style="list-style-type: none"> the reactions in which there is a change of state. the reactions in which there is a change in number of moles from reactants and products. the dissolving of ionic solids in water. 	<p>Teacher uses video and power point to discuss the entropy changes take place in different reactions.</p> <p>Student uses worksheet to write answers based on the topic.</p>
3.03.21 Wednesday 5 , 6 13A	<p>Learning Objective: Explain the concept of Gibbs energy.</p> <p>Learning Outcome:</p> <ul style="list-style-type: none"> Understand that the balance between the entropy change and the enthalpy change determines the feasibility of a reaction and is represented by the equation $\Delta G = \Delta H - T \Delta S$ Use the equation to predict whether a reaction is thermodynamically feasible. Determine the temperature at which a reaction is thermodynamically feasible. 	<p>Teacher uses PowerPoint presentation and video to discuss different problems based on Gibbs free energy equation.</p> <p>Student uses past paper to reinforce the concept of Gibbs Free energy Change.</p>
28.02.21 Sunday 3 13A		
02.03.21 Tuesday 1 13B		
Mode of Teaching – Zoom		
Mode of Teaching – Zoom		

HOMEWORK: Solve textbook question page 69 – Question 1 , 2