YEAR 9 A - F – CHEMISTRY

WEEK 26 (21st Feb to 25th Feb)

Work Sent to the students through Group email/ Google classroom

Topic:– SC5c – Properties of Ionic Compounds

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

Date	Lesson	Topic	Mode of Teaching	
21st Feb Sunday **(girls)**	6	**Learning Objective :** Explain the properties of ionic compounds limited to: high melting points and boiling points, in terms of forces between ions **Success Criteria:** • Describe the properties of ionic compounds. • Explain why ionic compounds have high melting points and high boiling points.	**Zoom**	PPT/Video on Properties of Ionic Compounds
22nd Feb Monday **(boys)**	7			
22nd Feb Monday **(girls)**	5	**Learning Objective :** Explain the properties of ionic compounds limited to: whether or not they conduct electricity as solids, when molten and in aqueous solution **Success Criteria:** • Explain why ionic compounds conduct electricity when they are molten and in aqueous solution • Explain why ionic compounds do not conduct electricity as solids.	**Zoom**	PPT / Video on Properties of Ionic Compounds
22nd Feb Monday– **(boys)**	8			
22nd Feb Monday **(girls)**	6	**Learning Objective :** Identify ionic compounds from the given substances **Success Criteria:** • Identify ionic compounds from data about their properties. • Identify ionic compounds from their melting and boiling points • Identify ionic compounds from their conductivity of electricity.	**GC**	Worksheet SC5c
24th Feb Wednesday – **(boys)**	1			

Homework : Complete question E1 on page 39 of your textbook in your notebook

YEAR 10 A/D/E–CHEMISTRY (girls)

WEEK 26 (21st Feb to 25th Feb)

Work Sent to the students through Google classroom

Topic: Electrolytic refining and electroplating.

Resources: Text book, Worksheet, power point.

Date	Lesson	Topic	Mode of Teaching	
21/2/2021 Sunday	3	**Learning Objective:** To reinforce electrolytic refining: Explain the formation of the products in the electrolysis of copper sulfate solution, using copper electrodes, and how this electrolysis can be used to purify copper.. **Learning Outcome:** • How is copper purified using electrolysis? •Analyze the formation of the products in the electrolysis of copper sulfate solution, using copper electrodes, and how this electrolysis can be used to purify copper.	**Zoom**	Teacher uses power point presentation to explain the formation of the products in the electrolysis of copper sulfate solution, using copper electrodes
24/2/2021 Wednesday	3	**Learning Objective:** Explain how electroplating can be used to improve the appearance and/or the resistance to corrosion of metal objects. **Learning Outcome:** • Recall what electroplating is. • Recall some common examples of electroplating. • Explain why metal objects may be electroplated.	**Zoom**	Teacher uses power point presentation to explain how electroplating c be used to improve th appearance and/or th resistance to corrosio of metal objects.
25/2/2021 Thursday	2	**Learning Objective:** Explain how electroplating is carried out. **Learning Outcome:** • Explain the changes that occur at the electrodes •Write half equations for the reactions at the anode and cathode •Explain whether the reaction at each electrode is oxidation or reduction	**Zoom**	Teacher uses power point presentation that contains interactive questions on electroplating.
	3	**Learning Objective:** To answer the questions, on electrolytic refining and electro plating, 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 S1and E1 question : SC13c(Pg101)

YEAR 10 B/C/F–CHEMISTRY (Boys)

WEEK 26 (21st Feb to 25th Feb)
Work Sent to the students through Google classroom
Topic: Electrolytic refining and electroplating.
Resources: Text book, Worksheet, power point.

Date	Lesson	Topic	Mode of Teaching	
21/2/2021 Sunday	0	**Learning Objective:** Reinforcement of electrolytic refining: Explain the formation of the products in the electrolysis of copper sulfate solution, using copper electrodes, and how this electrolysis can be used to purify copper.. **Learning Outcome:** • How is copper purified using electrolysis? •Analyse the formation of the products in the electrolysis of copper sulfate solution, using copper electrodes, and how this electrolysis can be used to purify copper.	**Google Meet**	Teacher uses powerpoint presentation to explain the formation of the products in the electrolysis of copper sulfate solution, using copper electrodes
22/2/2021 Monday	1&2	**Learning Objective:** 1.Explain how electroplating can be used to improve the appearance and/or the resistance to corrosion of metal objects. 2.Explain how electroplating is carried out. **Learning Outcome:** • Recall what electroplating is. • Recall some common examples of electroplating. •Explain why metal objects may be electroplated. • Explain the changes that occur at the electrodes •Write half equations for the reactions at the anode and cathode •Explain whether the reaction at each electrode is oxidation or reduction	**Google Meet**	Teacher uses powerpoint presentation to explain how electroplating ca be used to impr the appearance and/or the resistance to corrosion of me objects. .
24/2/2021 Wednesday	4	**Learning Objective:** To answer the questions, on electrolytic refining and electro plating, 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 S1and E1 question :SC13c(Pg101)

YEAR 11 A/D/E – CHEMISTRY (Girls)

WEEK 26 (21st Feb to 25th Feb)

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

Topic:– SC24a: Addition Polymerisation
SC24b: Polymer properties and uses

Resources: Text book,Worksheet, Boardworks powerpoint

Date	Topic	
21.02.21 Sunday 8th period **Mode of Teaching**: GC	**Learning Objective:** To answer the questions, on Alcohols and Carboxylic acids, 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.
22.02.21 Monday 4th period **Mode of Teaching:** Zoom	**Learning Objective:** Recall that a polymer is a substance of high average relative molecular mass made up of small repeating units. Describe: a how ethene molecules can combine together in a polymerisation reaction b that the addition polymer formed is called poly(ethene) (conditions and mechanisms not required) **Learning Outcome:** Describe how monomers, for example ethene or chloroethene (vinyl chloride), can join together to make very long chain molecules called polymers and the process is known as addition polymerization. Apply the basic knowledge of polymerization of ethene and chloroethene to construct **some** equations formation of poly(propene), poly(chloroethene) (PVC) and PTFE.	Teacher uses powerpoint presentation with interactive questions
24.02.21 Wednesday 8th period **Mode of Teaching:** Zoom	**Learning Objective:** Deduce the structure of a monomer from the structure of an addition polymer and vice versa Explain how the uses of polymers are related to their properties and vice versa: including poly(ethene), poly(propene), poly(chloroethene) (PVC) and poly(tetrafluoroethene) (PTFE) **Learning Outcome:** Identify monomer and polymers from cited examples Correlate use and properties of polymers Realise that polymers are often hard to dispose of, and that Biodegradable ones offer some solutions to these problems.	Teacher uses powerpoint presentation with interactive questions
25.02.21 Thursday 5th and 6th Period **Mode of Teaching:** Zoom	**Learning Objective:** Core Practical 8: To investigate the temperature rise produced in a known mass of water by the combustion of the alcohols ethanol,propanol,butanol and pentanol. **Learning Outcome:** Compare the heat energy produced by the four alcohols. Draw conclusions about the trend in the properties of alcohols	Teacher shows a video and asks students to note the observations and draw conclusions

HOMEWORK: Complete the textbook Qs of SC24a: Addition Polymerisation; SC24b: Polymer properties and uses

YEAR 11 B/C/F – CHEMISTRY (Boys)

WEEK 26 (21st Feb to 25th Feb)

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

Topic:– SC24a: Addition Polymerisation
SC24b: Polymer properties and uses

Resources: Text book,Worksheet, Boardworks powerpoint

Date	Topic	
21.02.21 Sunday 1st and 2nd Period **Mode of Teaching:** Zoom	**Learning Objective:** Core Practical 8: To investigate the temperature rise produced in a known mass of water by the combustion of the alcohols ethanol,propanol,butanol and pentanol. **Learning Outcome:** Compare the heat energy produced by the four alcohols. Draw conclusions about the trend in the properties of alcohols	Teacher shows a video and asks students to note the observations and draw conclusions
22.02.21 Monday 3rd Period **Mode of Teaching:** Zoom	**Learning Objective:** Recall that a polymer is a substance of high average relative molecular mass made up of small repeating units. Describe: a how ethene molecules can combine together in a polymerisation reaction b that the addition polymer formed is called poly(ethene) (conditions and mechanisms not required) **Learning Outcome:** Describe how monomers, for example ethene or chloroethene (vinyl chloride), can join together to make very long chain molecules called polymers and the process is known as addition polymerization. Apply the basic knowledge of polymerization of ethene and chloroethene to construct **some** equations formation of poly(propene), poly(chloroethene) (PVC) and PTFE.	Teacher uses powerpoint presentation with interactive questions
23.02.21 Tuesday 7th Period **Mode of Teaching:** Zoom	**Learning Objective:** Deduce the structure of a monomer from the structure of an addition polymer and vice versa Explain how the uses of polymers are related to their properties and vice versa: including poly(ethene), poly(propene), poly(chloroethene) (PVC) and poly(tetrafluoroethene) (PTFE) **Learning Outcome:** Identify monomer anf polymers from cited examples Correlate use and properties of polymers Realise that polymers are often hard to dispose of, and that Biodegradable ones offer some solutions to these problems.	Teacher uses powerpoint presentation with interactive questions
25.02.21 Thursday 4th Period **Mode of Teaching:** GC	**Learning Objective:** To answer the questions, on Addition polymerization and polymer properties and uses, 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 SC24a: Addition Polymerisation; SC24b: Polymer properties and uses.

YEAR 11 G/H–CHEMISTRY (IGCSE)

WEEK 26 (21st Feb to 25th Feb)

Work Sent to the students through Zoom Learning Platform / Google classroom
Topic:– Esters & Synthetic polymers
Resources: Text book, Worksheet, IGCSE science free lesson video, power point.

Date	Topic	
21.02.2021 Sunday 6th period **Mode of Teaching**: Zoom/ Google Meet	**Lesson Objective:** Know that ethyl ethanoate is the ester produced when ethanol and ethanoic acid react in the presence of an acid catalyst Understand how to write the structural and displayed formulae of ethyl ethanoate **Learning Outcome:** Write equations to show how esters are formed. Write structural and displayed formulae of esters	Teacher uses power point presentation with interactive questions.
22.02.2021 Monday 5th period **Mode of Teaching**: Zoom/ Google Meet	**Lesson Objective:** Understand how to write the structural and displayed formulae of an ester, given the name or formula of the alcohol and carboxylic acid from which it is formed and vice versa Know that esters are volatile compounds with distinctive smells and are used as food flavourings and in perfumes **Learning Outcome**: Predict the name of esters given the alcohol and carboxylic acid. List physical properties of esters and state their uses.	Teacher uses power point presentation with interactive questions
23.02.2021 Tuesday 1st period & 2nd period **Mode of Teaching**: Zoom/ Google Meet	**Lesson Objective:** Know that an addition polymer is formed by joining up many small molecules called monomers Uunderstand how to draw the repeat unit of an addition polymer, including poly(ethene), poly(propene), poly(chloroethene) and (poly)tetrafluoroethene **Learning Outcome**: Describe how monomers, for example ethene or chloroethene (vinyl chloride), can join together to make very long chain molecules called polymers and the process is known as addition polymerization. Write few equations for the polymerization of ethene and chloroethene (vinyl chloride)	Teacher uses power point presentation with interactive questions
	Lesson Objective: Understand how to deduce the structure of a monomer from the repeat unit of an addition polymer and vice versa **Learning Outcome**:	Teacher uses power point presentation with

	Apply the basic knowledge of polymerization of ethene and chloroethene to construct **some** equations formation of poly(propene), poly(chloroethene) (PVC)	interactive questions
25.02.2021 Thursday 4th period **Mode of Teaching**: GC	**Learning Objective:** To answer the questions on Esters and Addition 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.

YEAR 12 G /D – CHEMISTRY

WEEK 26 (21st Feb to 25th Feb)
Work Sent to the students through Zoom Learning Platform / Google classroom
Topic:– Reaction kinetics
Resources: Text book, Worksheet file, video, power point presentations.

Date	**Topic**	**Mode of Teaching**	
22.2.2021 Monday 3 **12D** 23.2.2021 Tuesday 1 **12G**	**Learning Objective:** To reinforce Maxwell-Boltzmann distribution curve: Explain how changes in temperature can affect the rate of a reaction, in terms of a qualitative understanding of the Maxwell-Boltzmann model of the distribution of molecular energies. **Learning outcome:** • Draw Maxwell – Boltzmann distribution curves. • Effect of increasing temperature on the rate of exothermic and endothermic reactions •	Zoom	Teacher uses power point presentation to explain Maxwell-Boltzmann model of the distribution of molecular energies
23.2.2021 Tuesday 2 **12G** 7 **12D**	**Learning Objective:** 1. Understand the role of catalyst in providing alternative reaction routes of lower activation energy. 2. Explain how the addition of a catalyst can affect the rate of a reaction, in terms of qualitative understanding of Maxwell-Boltzmann model of the distribution of molecular energies. **Learning outcome:** • Draw the reaction profiles of both an uncatalysed and a catalysed reaction. • Understand the economic benefits of the use of catalyst in industrial reactions. • Understand the use of a solid catalyst for industrial reactions involving gases, in terms of providing a surface for the reaction.	Zoom	Teacher uses power point presentation to explain how the addition of a catalyst can affect the rate of a reaction.

24.2.2021 Wednesday 2 **12G** 25.2.2021 Thursday **7 12D**	**Learning Objective:** To reinforce the concepts such as reaction rate , collision theory, activation energy, Factors affecting reaction rate, Maxwell-Boltzmann distribution curve and effect of catalysts. **Learning outcome:** Students will be able to recall and apply the concepts learned by solving exam style questions.	Zoom	Teacher uses PowerPoint presentation to reinforce the concepts.

HOMEWORK: Solve textbook questions (pg 262)

YEAR 12 D/G– CHEMISTRY

WEEK 26 (21st Feb to 25th Feb)

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**	
23.02.21 Tuesday 8 **12D** 22.02.21 Monday 6 **12G** **Mode of Teaching –** Zoom	**Learning Objective:** Atom economy. **Learning Outcome: students will be able to:** Define atom economy. Explain the need of high atom economy. Calculate atom economy for various reaction. Select correct pathway to for manufacture of chemicals at industrial level with respect to high atom economy.	Teacher uses power point to show rules to recap basics of organic linking to GCSE level. Lesson will be developed with many examples.
22.02.21 Monday 7- **12G** 24.02.21 Wednesday 7- **12D** **Mode of Teaching –** ZOOM	**Learning Objective:** Percentage yield from experimental data and revision of atom economy. **Learning Outcome: students will be able to:** Be able to calculate percentage yields and percentage atom economies using chemical equations and experimental results molar mass of the desired product Atom economy of a reaction = × 100% sum of the molar masses of all products	Teacher uses power point presentation and videos to explain the concept of concentration in various units. Teacher uses worksheet that contains interactive questions, to calculate % yield.

24.02.21 Wednesday **8- 12D** **1-12G** **Mode of Teaching –** zoom	**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.** **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. *Calculations of empirical formula may involve composition by mass or percentage composition by mass data*.	Teacher uses questions from various past papers. Teacher uses worksheet that contains interactive questions, to explain quantitative chemistry.

HOMEWORK: Solve exam style questions from text book.

YEAR 13 A /B –CHEMISTRY

WEEK 26 (21st Feb to 25th Feb)

Topic: further organic chemistry.

Topic 18B: Amines, amides, amino acids and proteins

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

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

Date	**Topic**	
21.02.2021 Sunday **1-13A** **4-13B** **Mode of Teaching –** Zoom	**Lesson Objective:** Writing of systemic names of amine and amide. Synthesis of amides by various routes. **Success Criteria: students will be able to:** Predict the missing compounds in the given routes. Identify condition and type of reaction at each stage. Complete the reaction. select and justify suitable practical procedures for carrying out reactions involving compounds with functional groups included in the specification, including identifying appropriate control measures to reduce risk, based on data about hazards	Teacher uses power point presentation that contains interactive questions. Students solve the worksheet file questions.

Sunday 21.02.2021 **2-13 A** 23.02.2021 Tuesday **2-13B** **Mode of Teaching –** Zoom	**Lesson Objective:** Condensation polymers. **Success Criteria: students will be able to:** draw the structural formulae of the repeat units of condensation polymers formed by reactions between: i dicarboxylic acids and diols ii dicarboxylic acids and diamines iii amino acids Understand the formation, structure and uses of the polyamides, nylon , Kevlar. Understand the formation, structure and uses of the polyester, polyethylene terephthalate	Teacher uses power point presentation that contains interactive questions. Students solve the worksheet file questions.
Wednesday 24.02.21 **4- 13A** **2-13B** **Mode of Teaching –** Zoom	**Lesson Objective:** Zwitterions and its properties. **Success Criteria: students will be able to:** understand the properties of 2-amino acids, including: i acidity and basicity in solution, as a result of the formation of zwitterions ii effect of aqueous solutions on plane-polarised monochromatic light	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 .

Homework : Solve worksheet file questions and text book.

YEAR 13 A/B– CHEMISTRY

WEEK 26 (21st Feb to 25th Feb)

Work Sent to the students through Zoom Learning Platform / Google classroom
Topic:– Introduction to entropy and entropy calculations
Resources: Text book, Worksheet, Video, Board works, power point.

Date	**Topic**	
21.02.21 Sunday 5 ,8 **13B** 24.02.21 Wednesday 5 , 6 **13A** **Mode of Teaching –** Zoom	**Learning Objective:** Completion of core practical 13 **Learning Outcome:** • Identify the steps in the correct logical sequence. • Record the data in the observation table with proper units and precision. • Draw the graph of rate against concentration. • Deduce the order of a reaction with respect to each species involved in the reaction.	Teacher uses video and power point to discuss the experimental procedure for iodine clock reaction. Student uses worksheet to write observations and solve questions given in the worksheet.
21.02.21 Sunday 3 1**3A** 23.02.21 Tuesday 1 **13B** **Mode of Teaching –** Zoom	**Learning Objective:** Understand why entropy changes occur during changes of state. Define entropy. Solve problems related to entropy changes. **Learning Outcome:** Explain that some endothermic reactions can occur without the input of heat. Suggest the reason for the factors other than enthalpy which controls the feasibility of a reaction. Suggest the meaning of the term spontaneous reaction. Write the total entropy change in a reaction is equal to entropy change of the system and entropy change of the surroundings.	Teacher uses PowerPoint presentation and video to introduce the concept of entropy. Student uses past paper and worksheet to reinforce the concept of entropy calculations.

HOMEWORK: Solve textbook question page 63 – Question 1