YEAR 9 GCSE (A- F) – PHYSICS

WEEK 29 (14th March to 18th March)

Work Sent to the students through Google classroom

Topic: SP 5f – Using the long wavelengths

Resources: Student text book, Worksheet, GCSE science free lesson video, power point.

Date	Lesson	Lesson objectives & Learning outcomes	Mode of Teaching	
14th March Sunday **(Girls)** 14th March Sunday **(Boys)**	4 8	**Assessment - 2** SP 4g - Infrasound SP 5d – Electromagnetic waves SP 5e – The Electromagnetic spectrum	Zoom	Instruction will be given to the students to complete the Assessment.
16th March Tuesday **(Girls)** 18th March Thursday **(Boys)**	3 5	**Learning objective:** Discuss the effects of differences in the velocities of electromagnetic waves in different substances. Describe some uses of electromagnetic radiation • Radio waves • Microwaves • Infrared • Visible light **Learning Outcomes:** Explain the effects of differences in the velocities of electromagnetic waves in different substances. Explain the uses of each type of radiation: (a) radio waves: including broadcasting, communications and satellite transmissions (b) microwaves: including cooking, communications and satellite transmissions (c) infrared: including cooking, thermal imaging, short range communications, optical fibres, television remote controls and security systems (d) visible light: including vision, photography and illumination.	Zoom	Teacher uses power point presentation that contains interactive questions.

16th March Tuesday **(Girls)** 18th March Thursday **(Boys)**	4 6	**Learning Objective :** Recall that radio waves can be produced by, or can themselves induce, oscillations in electrical circuits. **Learning outcome:** Describe how radio waves are produced and detected by electrical circuits.	Zoom	Teacher uses power point presentation that contains interactive questions.

YEAR 10 A-F - Physics

WEEK 29 (14th March to 18th March)

Topic: Stopping distance

Lesson Objective: SP2g Stopping distances
SP2h Braking distances and energy

Resources: Student text book, worksheet file, interactive power point from Board works and Online animations

Worksheets and Zoom link will be posted in google classroom

Date	Lesson	Lesson objectives & Learning outcome	Mode of Teaching	
14th March Sunday (Boys) **14th March** Sunday (girls)	1 2	**L.O:** Explain that the stopping distance of a vehicle is affected by a range of factors **Learning outcome:** Students will be able to • Describe how speed affect thinking distance and stopping distance.	**Zoom/ GM**	Teacher uses a ppt presentation to discuss how speed affects stopping distance. Use a graph to compare how thinking distance and braking distance is related to speed. *(carried over from last week)*
16th March Tuesday (Boys) **17th March**	5	**L.O:** Estimate how the distance required for a road vehicle to stop in an emergency varies over a range of typical speeds.	**Zoom/ GM**	Teacher recalls the equations of work done and kinetic energy. Uses a powerpoint to

Wednesday (girls)	5	Carry out calculations on work done to show the dependence of braking distance for a vehicle on initial velocity squared (work done to bring a vehicle to rest equals its initial kinetic energy). **Learning outcome:** Students will be able to • Calculate the work done when a force moves through a distance. • Describe the factors that affect the kinetic energy of a moving object. • Calculate the kinetic energy of a moving object.		show that braking distance depends on velocity squared. Works out problems with work done and kinetic energy to calculate the braking distance.
16th March Tuesday (Boys) **17th March** Wednesday (girls)	6 6	**L.O:** Solve the worksheet posted GC **Learning outcome:** Students will be able to reinforce the concepts learned in the previous lesson by solving the worksheet	**GC**	Teacher will post the worksheet in the google classroom. Students will solve and turn in the worksheet
18th March Thursday (Boys) **18th March** Thursday (Girls)	4 1	**L.O** : Discussion of answers .**Learning outcome:** The students solve the textbook questions and worksheets	**Zoom/ GM**	Teacher will discuss the answers and clears the doubts and provide extra support to students facing difficulty in understanding the concepts

YEAR 11 (A- F) – PHYSICS (GCSE)

WEEK 29 (14th March to 18th March)

Work Sent to the students through Google classroom
Topic:– Revision on paper 2
Resources: Text book, Worksheets, GCSE science free lesson video& power points.

Date	Lesson	Topic	Mode of Teaching	
15th March Monday **(boys)**	3 4	**Learning Objective :** Revise paper 2 topics SP 13 and 15 electromagnetic induction particle model and forces and matter **Learning outcome:** Recall the contents by using flash cards or mind map Answer different leveled exam style questions and do self evaluation.	**Zoom**	Teacher uses power point presentation that contains interactive questions
15th March Monday (Girls) 16th March Tuesday (Boys	1 1	**Learning Objective :** Revise paper 2 topics SP 8 to 12 forces abd its effects, electricity, motor **Learning outcome:** Recall the contents by using flash cards or mind map Answer different leveled exam style questions and do self evaluation.	**Zoom**	Teacher uses a handout that contains productive questions
15th March Monday (Girls) 16th March Tuesday (Boys	2 2	**Learning Objective :** Revise paper 2 topics Electromagnetism **Learning outcome:** Recall the contents by using flash cards or mind map Answer different leveled exam style questions and do self evaluation.	**GC**	Teacher uses power point presentation that contains interactive questions

YEAR 11 G/H (IGCSE) – PHYSICS

WEEK 29 (14th March to 18th March)

Work sent to the students through Google classroom

Topic: Revision

Lesson Objective: Revise the concepts forces and motion, electricity and electromagnetism, energy and energy resources, radioactivity and particles, solids, liquids and gases, waves, astrophysics

Resources: Text book, Worksheet file, interactive power point and online simulations.

Date	Lesson	Learning objective and Success Criteria	Mode of teaching	
15th March Monday (boys &girls)	8	**LO-** Revise paper 1and 2 topics Solids, liquids and gases, astrophysics **Learning Outcome-** • Reinforce the concepts solids, liquids and gases, astrophysics • Apply the concept by solving the questions.	Zoom/GM	Teacher uses power point presentation that contains application level questions.
16th March Tuesday (boys & girls)	7	**LO-** Revise paper 1 and 2 topics Radioactivity and particles, electricity and electromagnetism **Learning outcome** • Reinforce the concepts radioactivity and particles electricity and electromagnetism • Apply the concepts.	Zoom/GM	Teacher uses power point presentation that contains interactive questions.
16th March Tuesday (boys & girls)	8	**LO-** Revise paper 1 and 2 topics Forces and motion ,waves, energy resources and energy transfer **Learning outcome** • Reinforce the concepts forces and motion, waves, energy resources and energy transfer • Solve the questions.	Zoom/GM	Instruction will be given to solve different level exam style questions

YEAR 12 A/ B –PHYSICS

WEEK 29 (14th March to 18th March) (3 lessons)

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

Topic: **Optics**

Resources: Student text book, worksheet file, interactive power point from Board works and Online PHET simulations

Date	Class	Lesson	Lesson objectives & Learning outcomes	Mode of teaching	
March 14th Sunday March 18th Thursday	12 A 12 B	8 3	**Learning objectives:** Identify the effect of refraction in everyday situations. **Learning Outcomes :** Realise that eye assumes straight line propagation of light. Identify the difference between real and apparent depth Use an equation to find the apparent depth in terms of angles . Recognize that thermal variations cause a gradient of refractive index in air which leads to most optical illusions.	Zoom	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives
March 15th Monday March 18th Thursday	12 A 12B	1 4	**Learning objectives:** Define total internal reflection Identify the conditions for TIR Recognize situations where total internal reflection is used **Learning Outcomes :** Recognize that there can be a partial reflection at any refracting boundary. Draw and interpret ray diagrams involving critical angle, refraction and TIR Use n = 1/ Sin C	Zoom	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives
March 15th Monday March 16th Tuesday	12 A 12B	2 6	**Learning objectives:** To conduct a module test – MCQ & structured questions of 35 marks **Learning Outcomes:** Test based on module 3.1& module 3.2 – ELECTRICAL QUANTITIES AND COMPLETE ELECTRICAL CIRCUITS Student's work will be assessed and accurate and constructive feedback about the next steps in learning will be given.	Zoom	Test paper assigned via GC and zoom session for invigilating the work.

YEAR 12 A/ B – PHYSICS

WEEK 29 (14th March to 18th March) - 3 lessons for both batches

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

Topic: 5.24 Wave interference

Resources: Student text book, worksheet file, interactive power point from Board works and Online animations

Date & Class	Lesson	Lesson objectives & Learning outcomes	Mode of teaching	
14th March Sunday - **12 B** 16th March Tuesday - **12 A**	6 4	**L.Objective –** Understand the terms interference and coherence. **Learning outcome:** • State the principle of superposition. • Define coherent sources - discuss what would happen if the phase difference is not zero and then if the phase difference changes in order to understand the term coherence. • Explain constructive and destructive interference. • State the phase difference and path difference for constructive and destructive interference.	**Zoom**	Teacher explains the concept of interference using simulation/video of ripple tank. Discuss the principle of superposition to understand constructive and destructive interference.
14th March Sunday - **12 B** 18th March Thursday - **12 A**	7 1	**L.Objective -** Show an understanding of experiments that demonstrate two-source interference using water ripples, sound waves and microwaves **Learning outcome:** • Outline the interference of different types of waves. • Describe interference of sound using two loudspeakers and a microphone. • Explain how noise-cancelling headphones work • Describe interference patterns in a ripple tank.	**Zoom**	Teacher discuss and list the conditions needed for a two source interference pattern. Use simulations and video to explain the experimental set up for interference with water ripples, sound and microwaves.
17th March Wednesday - **12 B** 18th March Thursday - **12 A**	3 2	**L.Objective –** Complete the worksheet posted in GC **<u>Learning outcome:</u>** Students will be able to reinforce the concepts learned in the previous lesson by completing the worksheet.	**GC**	Instruction will be given in GC to complete the worksheet.

<u>HOMEWORK:</u> Complete TB ques: Pg 156

YEAR 13 A/ B –PHYSICS

WEEK 29 (14th March to 18th March) - 3 lessons for both batches

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

Topic: - Revision: Topic 7 –Electric and magnetic fields
Topic 8 – Nuclear and particle physics

Resources: Student text book, interactive power point, Board works, worksheet file and online videos/animations

Date	Lesson	Lesson objectives & Learning outcome	Mode of teaching	
15th March Monday **- 13 A** 16th March Tuesday **- 13 B**	1 6	**Learning Objective:** Revise the topics in electric fields. **Learning Outcome:** • State Coulomb's law and use the expression $F = kq_1q_2/r^2$ to find the size of the force between two point charges. • Define electric field strength as force per unit positive charge (E=F/q). • Sketch the equipotentials between two parallel plates and radial field. • Use the expression W= ½ QV &W = ½ CV^2 for the energy stored by a capacitor • Describe the charging and discharging of a capacitor.	**Zoom**	Teacher discuss with students and uses past papers to reinforce the concept of electric field and capacitors.
15th March Monday **- 13 A** 18th March Thursday **- 13 B**	2 3	**Learning Objective:** Revise the topics:- magnetic fields and electromagnetic effects. **Learning outcomes-** • Define magnetic flux and magnetic flux density • Use the expression $F = BIl \sin\theta$ and apply Fleming's left hand rule to current carrying conductors in a magnetic field. • Recognize the effect of magnetic field on charges moving through a magnetic field. • Define electromagnetic induction and compare it with motor effect in terms of energy changes. • Describe the principle of a generator on the basis of electromagnetic induction with movement**.**	**Zoom**	Teacher explains the concepts and students use past papers to reinforce the concept of magnetic fields and electromagnetic effects
16th March Tuesday **- 13 A**	5	**Learning Objective:** Revise the topics:- Particle accelerators and detectors **Learning outcomes-** • Explain how electrons can be accelerated by	**Zoom**	Teacher uses power point presentation to

18th March Thursday **- 13 B**	4	electric fields. • Use ½ mv^2= eV to calculate energy gain of electron beams under electric fields. • Describe the structure of a Linac • Explain the role of electric and magnetic fields in particle accelerators like cyclotron • Explain the role of electric and magnetic fields in particle detectors like cloud chamber and bubble chamber in terms of ionization and deflection.		explains the concepts and students use past papers to reinforce the concepts learnt.

HOMEWORK: Worksheet file – exam style questions

YEAR 13A/ B –PHYSICS

WEEK 29 (14th March to 18th March) (3 lessons)

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

Topic: - Revision

Date	Class	Lesson	Lesson objectives & Learning outcome	Mode of teaching	
March 15th Monday **March 16th** **Tuesday**	**13 B** **13A**	**6** **4**	**Learning objectives**: Revise Electrical cirrcuits solid materials Fluid dynamics **Learning Outcomes** : Recall the contents by using flash cards or mind map Answer different levelled exam style questions and do self evaluation	**Zoom**	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives.
March 15th Monday **March 18th** **Thursday**	**13 B** **13A**	**7** **1**	**Learning objectives**: Revise circular motion momentum Nuclear physics **Learning Outcomes** : Recall the contents by using flash cards or mind map Answer different leveled exam style	**zoom**	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives.

			questions and do self evaluation.		
March 17th Wednesday **March 18th** **Thursday**	**13 B** **13 A**	**3** **2**	**Learning objectives**: Revise Quantum Physics Thermodynamics **Learning Outcomes** : Recall the contents by using flash cards or mind map Answer different leveled exam style questions and do self evaluation.	**zoom**	Teacher uses GC and breakout sessions for students to collaborate and attain the objectives.