

YEAR 13A/ B –PHYSICS

WEEK 7 (11th Oct to 15st October) 3 lessons for both batches

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

Topic: Circular Motion & Thermodynamics

Date	Class	Lesson	Lesson objectives & Learning outcome	Mode of teaching	
11 th Oct Monday	13 B	6	<p>Learning objectives: Investigate, recognise and use the expression</p> $\Delta E = mc\delta\theta$ <p>Learning Outcomes : Describe an electrical experiment to determine the specific heat capacity of a solid or a liquid. Measure specific heat capacity of a solid and a liquid using, for example, temperature sensor and data logger.</p>	Zoom	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives.
12 th Oct Tuesday	13 A	4	Infer how to determine shc graphically from the variables collected		
11 th Oct Monday	13 B	7	<p>Learning objectives: Reinforce how conservation of energy is used in calorimetry to identify the specific heat capacity of materials.</p> <p>Learning Outcomes : Plan and apply the experimental methods of calorimetry in the determination of the specific heat of COPPER.</p>	Zoom	Teacher uses power point presentation and breakout sessions for students to collaborate and attain the objectives.
15 th Oct Thursday	13 A	1	Use the experimental data to find the specific heat of an unknown metal and research to identify the		

			metal.		
14 th Oct Wednesd ay	13 B	3	<p>Learning objectives:</p> <p>Explain the change of state and the energy changes associated with it using specific latent heat of vapourisation.</p> <p>Learning Outcomes :</p> <p>Describe what happens to the energy supplied during a change of state.</p> <p>Use $E = mL$ to calculate the energy needed to change state.</p> <p>Investigating specific latent heat</p>	Zoom	Teacher uses Google Classroom and breakout sessions in Zoom for students to collaborate and attain the objectives.
15 th Oct Thursda y	13 A	2			

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Topic: - 7.2 - Capacitors

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

Date	Lesson	Lesson objectives & Learning outcome	Mode of teaching	
12 th Oct Monday - 13 A	1	<p>L.O – <u>CORE PRACTICAL 11:</u> Use an oscilloscope or data logger to display and analyse the potential difference (p.d.) across a capacitor as it charges and discharges through a resistor.</p> <p>Learning outcomes-</p>	Zoom	Teacher uses power point presentation to guide the students to plan and carry
13 th Oct Tuesday				

<p>- 13 B</p>	<p>6</p>	<ul style="list-style-type: none"> Plan expt to measure pd across the discharging capacitor Sketch graphs that show the variation with time of potential difference for a capacitor discharging through a resistor. Define the time constant of a circuit. Use time constant = CR from graph to determine the value of unknown capacitor. 		<p>out the virtual expt and analyse the pd across capacitor as it charges and discharges through a resistor.</p>
<p>12th Oct Monday - 13 A</p> <p>15th Oct Thursday - 13 B</p>	<p>2</p> <p>3</p>	<p>L.O – Use related expressions, for exponential discharge in RC circuits, $I = I_0 e^{-t/RC}$ and $V = V_0 e^{-t/RC}$ and the corresponding log equations $\ln Q = \ln Q_0 - \frac{t}{RC}$ $\ln I = \ln I_0 - \frac{t}{RC}$ and $\ln V = \ln V_0 - \frac{t}{RC}$</p> <p>Learning outcomes-</p> <ul style="list-style-type: none"> Derive a straight line graph from the decay equation and hence plot graph of $\ln Q$ or $\ln I$ against time to find the time constant. 	<p>Zoom</p>	<p>Teacher uses boardworks & power point presentation to explain the concepts and guide students to understand the use of ln graphs to determine time constant</p>
<p>13th Oct Tuesday - 13 A</p> <p>15th Oct Thursday - 13 B</p>	<p>5</p> <p>4</p>	<p>L.O - Show an understanding of the functions of capacitors in simple circuits</p> <p>Learning outcomes- Understand that capacitors are helpful in various practical uses for certain functions. These functions can include:</p> <ul style="list-style-type: none"> o blocking of direct currents o smoothing of rectified alternating currents o time delays in electronic circuits o defibrillators 	<p>Zoom</p>	<p>Students research on the uses of capacitors to find out some common situations where capacitors are put in use in circuits</p>

