

13 Physics



rm	Date	Focus	Summary	Learning Outcomes
T				Unit 3
				Explain how a dielectric affects a capacitor.
				Define relative permittivity and dielectric constant.
		Unit 3	Unit 3	Describe the action of a simple polar molecule rotating in an electric field.
		Capacitance	Dielectrics	Describe and interpret the shape of the Q-t charging curves and the shape of the Q-t discharging curves.
	02/01/23			
	02/01/23			Explain which circuit components you would change to make the charge/ discharge slower.
		Unit 4	Unit 4	Define the time constant of a capacitor-resistor circuit
		Thermal physics	Thermal energy retrieval practice	
		• •		Unit 4 - thermal
				Retrieval Practice and Feedback
L				Evaluate your learning of the content explored in Unit 4 to identify your areas of development
		Unit 3	Unit 3	
		Capacitance	Dielectrics	Unit 3
			Required Practical	Discuss whether a radioactive source can decay completely.
	09/01/23			Define exponential decrease.
		Unit 4	Unit 4	Explain why a radioactive decay is a random process
		Rotational Dynamics	Acceleration	
-		Notational Dynamics	Acceleration	Unit 3
				Discuss whether a radioactive source can decay completely.
		Unit 3	Unit 3	Define exponential decrease.
		Decay laws	Decay rules with capacitance and nuclear decay	Explain why a radioactive decay is a random process
		Decay laws	becay rules with capacitance and nuclear decay	
	16/01/23			Unit 4
ļ			11-14-4	Define angular acceleration.
ļ			Unit 4	Calculate the angular acceleration of a rotating object when it speeds up or slows down.
		Unit 4	Acceleration	Calculate the number of turns a rotating object makes in a certain time when it accelerates uniformly.
		Rotational Dynamics	Torque	
				Define torque.
				Explain moment of inertia.
L				Describe how angular acceleration of a rotating object depends on its moment of inertia.
ľ				Unit 3
				Measure the strength of a magnetic 🛙 eld.
				State the factors that the magnitude of the force on a current-carrying wire depends on.
				Determine the direction of the force on a current-carrying wire in a magnetic field.
		Unit 3	Unit 3	Describe what happens to charged particles in a magnetic field.
		Magnetic Fields		Explain why a force acts on a wire in a magnetic field when a current flows along the wire.
		iviagnetic Fields	Conductors in a magnetic field	
			Moving charges in a magnetic fields	State the equation used to and the force on a moving charge
	23/01/23			
		Unit 4	Unit 4	Unit 4
		Rotational dynamics	KE	State what the kinetic energy of a rotating object depends on.
			Angular momentum and Impulse	Calculate the work done by a torque when it makes a rotating object turn.
				Describe how to measure the moment of inertia of a flywheel.
				State what angular momentum is and why it is important.
				State what is meant by the conservation of angular momentum.
				Explain what angular impulse is.
-				Explain how the equations for angular momentum and linear momentum compare with each other
				Unit 3
				Measure the strength of a magnetic field.
				State the factors that the magnitude of the force on a current-carrying wire depends on.
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		Magnetic Fields Unit 4 Renewable energy Unit 3 Magnetic Fields Unit 4	Conductors in a magnetic field Moving charges in a magnetic fields Unit 4 Wind power Solar power Unit 3 Conductors in a magnetic field Moving charges in a magnetic fields Unit 4	Describe what happens to charged particles in a magnetic field.   Explain why a force acts on a wire in a magnetic field when a current flows along the wire.   State the equation used to and the force on a moving charge   Unit 4   Describe the factors that determine the power available from a wind turbine.   Calculate the maximum power available from the wind passing through a wind turbine.   Explain why not all the kinetic energy from the wind can be used.   Explain why not all the kinetic energy from the wind can be used.   Explain what is meant by wind shadows.   Describe the environmental effects of using wind turbines   Describe the factors that affect the power available from the Sun.   Calculate the maximum power available from the Sun.   Calculate the factors that affect the power available from the Sun.   Describe the characteristics of a solar cell.   Explain how solar cells may be connected together in a solar panel.   Unit 3   Measure the strength of a magnetic field.   State the factors that the magnitude of the force on a current-carrying wire depends on.   Determine the direction of the force on a moving charge   Unit 4   Describe what happens to charged particles in a magnetic field.   Explain why a force acts on a wire in a magnetic field when a current flows along the wire.

13/02/23			School Break Half Term February
			Unit 3
			Describe what happens to the direction of the magnetic force when electrons are deflected by a magnetic 🛙 eld.
	Unit 3	Unit 3	Explain why the moving charges move in a path that is circular.
	Magnetic Fields	Moving charges in a magnetic field	State the factors that affect the radius of the circular path.
		Induction	Describe what must happen to a conductor (or to the magnetic field in which it is placed) for electricity to be generated.
20/02/23			State the factors that would cause the induced e.m.f. to be greater.
	Unit 4	Unit 4	Discuss whether an induced e.m.f. always causes a current to flow.
	Renewable energy	Retrieval practice for renewable energy and rotational	
		dynamics	Unit 4
			Retrieval Practice and Feedback
			Evaluate your learning of the content explored in Unit 1 to idenitfy your areas of development
			Unit 3
			Describe what happens to the direction of the magnetic force when electrons are deflected by a magnetic Beld.
			Explain why the moving charges move in a path that is circular.
		Unit 3	State the factors that affect the radius of the circular path
	Unit 3	Charged particles in a magnetic field	Describe what must happen to a conductor (or to the magnetic field in which it is placed) for electricity to be generated.
	Magnetic Fields	EMF and Induction	State the factors that would cause the induced e.m.f. to be greater.
27/02/23		Conservation of energy and Magnetic fields	Discuss whether an induced e.m.f. always causes a current to flow
		conservation of energy and wagnetic news	Define the magnetic flux and the magnetic flux linkage.
			Relate the induced e.m.f. in a coil to the magnetic flux linkage through it.
			State Lenz's law and the conservation law that explains it
			State the two features of the output voltage waveform that change if the coil is turned faster.
			Explain why the output alternates.
			Explain why it is preferable for practical generators to have fixed coils and a rotating (electro)magnet
	Unit 3	Unit 3	Unit 3
			Define an alternating current.
	Magnetic Fields	Generating ac electricity	Explain what is meant by the rms value of an alternating current.
06/03/23		Transformers	Calculate the power suppliedby an alternating current.
,,		National Grid	Explain the purpose of transformers.
			Describe the energy changes that take place in a transformer.
			Discuss how the effciency of transformers is improved
	Unit 3		
	Magnetic Fields	Unit 3	Unit 3
13/03/23	wagnetic rielus	Retrieval Practice	Retrieval Practice and Feedback
100/20		netreval Facilite	Evaluate your learning of the content explored in Unit 3 to idenitfy your areas of development
			Levaluate your rearrang of the content explored in onit 3 to lucinity your areas of development
	Revision of content from all		
		Revision of content from all units and pratical catch	
20/03/23		ups for learners who may have missed out on them	Consolidating knowledge to ensure correct prep for examination series
_ 5/ 65/ 25	missed out on them over	over the AS and A2 year	consolidating anomedge to charle concerpted for examination series
	the AS and A2 year	over the no thu Az year	
	the AS allu Az year		