Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic : 13_Electromagnetic Induction

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Name of the Student:_____
Max. Marks : 17 Marks **Time : 17 Minutes**

Mark Schemes

Q1.

Question Number	Answer	Acceptable answers	Mark
(a)(i)	**component** ☐ ammeter coil of wire ☐ battery magnet ☐ voltmeter	one mark for each correct tick deduct 1 mark for each extra tick	**(2)**

Question Number	Answer	Acceptable answers	Mark
(a)(ii)	Explanation linking any two of • wind (speed) is not constant (1) • voltage depends on wind speed (1)	need idea of varying wind {electrical energy / electricity} depends on wind speed higher wind speed gives {higher voltage/more electrical energy/more electricity} = 2 marks voltage is alternating = 2 marks	**(2)**

Question Number	Answer	Acceptable answers	Mark
(a)(iii)	(saving) = 2 × 3 × 15 (1) 90 (p) (1)	award full marks for correct answer with no working 2 × 3 × 0.15 (£) 0.90	**(2)**

Question Number	Answer	Acceptable answers	Mark
(b)	power = 2500 (W) (1) (current) = $\frac{2500}{230}$ (1) **ecf** 11 (A) (1)	award full marks for correct answer with no working [2.5/230 is 1 mark for these 2] 10.9 / 10.8... **accept** {0.01... / 0.11... / 1.1...} for 2 marks	**(3)**

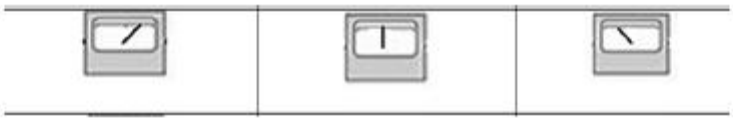
Question Number	Answer	Acceptable answers	Mark
(c)	EITHER sometimes no / very little wind (1) OR some appliances rated above 2 kW (1)	need wind vague references to weather are insufficient may use more than one appliance at once **or** house needs more (than 2kW) power not enough power for kettle **ignore** references to electrical energy / electricity	**(1)**

Q2.

Question number	Answer	Additional guidance	Mark
(i)	C (a) slower than (b) and (a) opposite to (b) B and D are incorrect because the direction of the readings are opposite and so the rotations must be opposite A is incorrect because the value in (a) is less than the value in (b) and so the rotation cannot be faster		**(1)** **AO1**

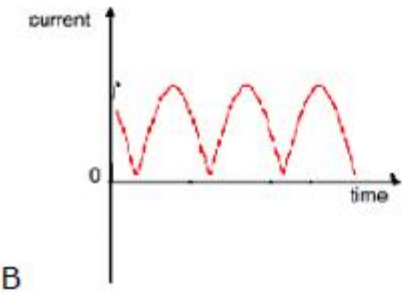
Question number	Answer	Additional guidance	Mark
(ii)	**either** an answer in terms of magnetic fields and forces: current in the (dynamo) coil generates a magnetic field (1) (interaction of) fields cause force (that opposes motion) (1) **OR** an answer in terms of output energy and input work: energy is being transferred to the lamp (1) additional work is being done (by teacher) / additional energy is necessary (1)	accept lamp uses (thermal / heat / light) energy (to light up) ignore reference to greater (electrical) resistance	**(2)** **AO1**

Q3.

Question number	Answer	Mark
(i)	C  A and B are incorrect because there is no current when the magnet is station in the coil. D is incorrect because there is always a current when the magnet is moving in th coil	(1)

Question number	Answer	Additional guidance	Mark
(ii)	any two from moving the magnet faster (1) using a stronger magnet (1) more turns/rotations on the coil (1)	 do not allow increase size of coil	(2)

Q4.

Question Number:	Answer	Mark
	 B **The only correct answer is B** ***A*** *is incorrect because it shows an alternating current which is produced by an alternator and not by a dynamo* ***C*** *is incorrect because it shows a square waveform which is not produced by a dynamo* ***D*** *is incorrect because it shows current linearly increasing with time and this is not produced by a dynamo*	**(1)** AO 3 2b