Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic : 11_Static Electricity

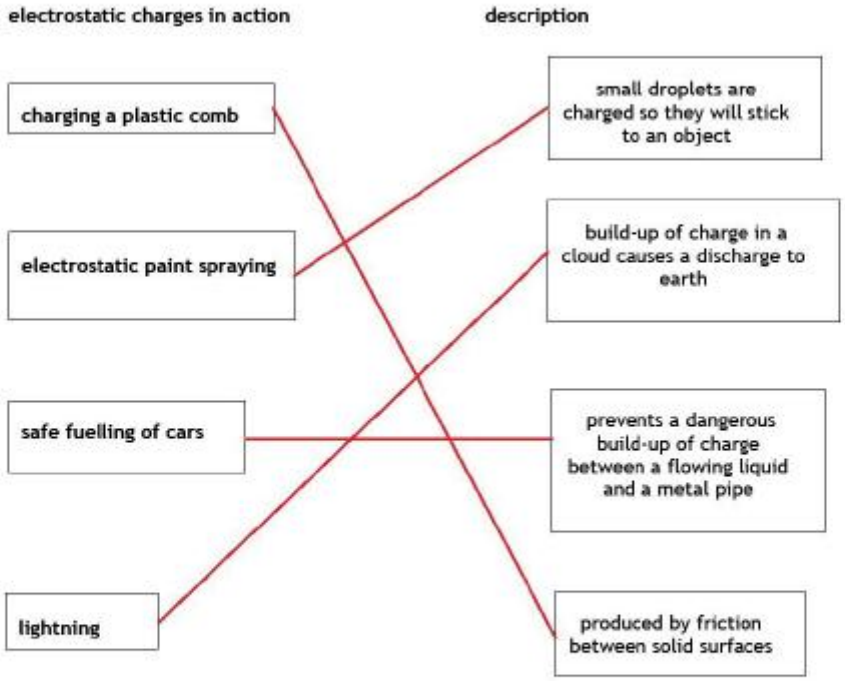
Name of the Student:_____
Max. Marks : 21 Marks **Time : 21 Minutes**

Mark Schemes

Q1.

	Answer	Acceptable answers	Mark
	A description to include the situation which caused the charge separation (1) where the spark travelled from or to(1)	examples when refuelling, spark between end of fuel/pipe and vehicle =2 spark between/from /to person comb/clothes/metal handle and, when combing hair/removing clothing/opening door = 2 lightning flash, between cloud and cloud/plane/ground, =2 ignore between plug and socket/jump leads	**(2)**

Q2.

Question number	Answer	Additional guidance	Mark
		1 mark for one line correct 2 marks for two or three lines correct 3 marks for four lines correct. if more than one line is drawn from or to a box, do not credit any of those lines	**(3) AO3**

Q3.

Question number	Answer	Additional guidance	Mark
	drawing lines to include any **two** from		**(2) AO1**
	any vertical line (in between plates) (1)	judge by eye	
	at least two parallel lines (1)	ignore any curved lines at the ends of the plates	
	any arrow downwards (to show direction) (1)	reject contradicting arrows for this mp	

Q4.

		Indicative Content	Mark
		An explanation etc. including some of the following points • static electricity • opposites charges attract • charges are different • induced charges • charges separate • charges move • electrons move • electrons move towards a positive charge / balloon / rod Allow credit for a correct explanation for an effect which is not given in the question. Allow credit for separation of charge being shown on a diagram.	**(6)**
Level	**0**	No rewardable content	
1	**1 - 2**	• a limited explanation. Explains the effect is caused by charges. e.g. the charge on the balloon pulls the water; the charge on the rod attracts the bits of paper; the balloon is rubbed to give it charge; opposites attract; positive and negative attract; • the answer communicates ideas using simple language and uses limited scientific terminology • spelling, punctuation and grammar are used with limited accuracy	
2	**3 - 4**	• a simple explanation. Explains an effect is caused by opposite charges attracting or like charges repelling. e.g. the charge on the balloon is opposite to the charge on the water so they attract; the positive charges on the balloon attract negative charges on the girl's hair; • the answer communicates ideas showing some evidence of clarity and organisation and uses scientific terminology	

		appropriately • spelling, punctuation and grammar are used with some accuracy
3	**5 - 6**	• a detailed explanation. Explains the effect is caused by induction, charge separation or moving electrons which leads to attraction between opposite charges. e.g. the electrons have been moved off the balloon so it has a positive charge and attracts the negative charge on the hair; the balloon has a positive charge and induces a negative charge on the stream of water which attracts it; • the answer communicates ideas clearly and coherently uses a range of scientific terminology accurately • spelling, punctuation and grammar are used with few errors

Q5.

Question	Answer	Additional guidance	Mark
	an explanation linking **two** from: metal/wire is a conductor (1) charge (electrons) moves in the wire (1) electrons/negative charges (move) from ground to the sphere (1) (the sphere is) earth(ed) (1)	explanations using moving positive charges OR moving positive electrons can score a maximum of ONE mark for this item if no other marks scored allow protons or positive charge(s) (in this context) moves <u>to the ground</u> for this mark only (the sphere is) ground(ed) OR electrons neutralise (the positive charge on) the sphere	**(2)** **AO1.1**

Q6.

Question number	Answer	Additional guidance	Mark
(i)	explanation linking like/same charges (on strands of hair) (1) (like charges) repel (1)	 positives / protons negatives / electrons if no other mark allow one mark for charge / 'it' / electron(s) moves OR current (in body, to or from dome) ignore 'static'	**(2)** **AO1**

Question number	Answer	Additional guidance	Mark
(ii)	substitution (1) (%) = $\frac{10}{25}$ (x 100) evaluation (1) (%) = 40 (%)	 accept 0.4 accept 10 and 25 written next to numerator and denominator of the stated equation award full marks for the correct answer without working	**(2)** **AO2**

Q7.

Question number	Answer	Additional guidance	Mark
	An explanation that combines identification – understanding (1 mark) and reasoning/justification – understanding (2 marks): • there is friction between aircraft and air (1) • which causes electron transfer between aircraft and air (1)	accept idea of air rubbing against wings ignore "charge" "static" do not allow (for second mark) idea of protons moving	**(2)**