

Static Electricity 3 MS

QUESTION 1

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	repel opposite attract	correct order only	1 1 1
b)	refuelling an aircraft a spark may cause an explosion / fire / ignite the fuel	reason cannot score if refuelling aircraft is not chosen accept the static for a spark accept named fuel there must be a consequence of having a spark do not accept answers in terms of people getting a shock or electrocuted	1 1
Total marks			5

QUESTION 2

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	negative	accept minus or - (ve) do not accept electron/s	1
a)ii)	Positive	accept plus or + (ve) allow this mark if (a)(i) and (a)(ii) are given the wrong way around	1
b)	Objects carrying the same type of charge repel. or Objects carrying the opposite type of charge attract.	do not accept unattract for repel accept different for opposite allow credit if candidates change	1

		more than one word but final statement is equivalent to one of these two.	
c)	1 photoconducting 3 charge 4 attracts		1 1 1
d)	accept anything feasible eg paint spraying / crop spraying / (electrostatic) precipitator / making sandpaper / a printer	accept a reasonable description of a process do not accept scanner on its own do not accept paint car / paint bicycle on its own must be use, not demonstration of charge ie rubbing a balloon and sticking to a wall is incorrect	1
Total marks			7

QUESTION 3

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)	fleece rubs against shirt or friction (between fleece and shirt) (causing) electrons to transfer from one to the other	it refers to the fleece accept a specific direction of transfer do not accept charge for electrons positive electrons negates this mark movement of protons negates this mark	1 1
b)	Electrical charges move easily through metals.		1

	An electric current is a flow of electrical charge.		1
c)i)	copper (good electrical) conductor	reason only scores if copper chosen accept it is a metal any mention of heat conduction negates this mark	1 1
c)ii)	lower than		1
c)iii)	accept any sensible suggestion, too many variables (to control) <ul style="list-style-type: none"> • lightning strikes / storms are random / unpredictable • do not know which building will be struck • do not know when a building will be struck • do not know when lightning will happen • (very) difficult to create same conditions in a laboratory • lightning storms are not the same 		1
Total marks			8

QUESTION 4

QUESTION	ANSWER	EXTRA INFORMATION	MARKS
a)i)	electrons a positive		1 1
a)ii)	(forces are) equal (forces act in) opposite directions	accept (forces are)the same forces are balanced is insufficient accept (forces) repel both sides have the same	1 1

		charge is insufficient	
b)	aluminium		1
Total marks			5