

Practice Question Set For GCSE

**Subject : Physics**

**Paper-2 Topic : 11\_Static Electricity**

**Name of the Student:** \_\_\_\_\_

**Max. Marks : 21 Marks**

**Time : 21 Minutes**

Q1.

Describe **one** situation where separation of electric charge can create a spark.

(2)

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Q2.

This question is about static electricity.

Draw **one** straight line from each example of electrostatic charges in action to their descriptions.

(3)

**electrostatic charges in action**

charging a plastic comb

electrostatic paint spraying

safe fuelling of cars  
by earthing

lightning

**description**

small droplets are charged so they  
will stick to an object

build-up of charge in a cloud causes  
a discharge to Earth

prevents a dangerous build-up of  
charge between a flowing liquid  
and a pipe

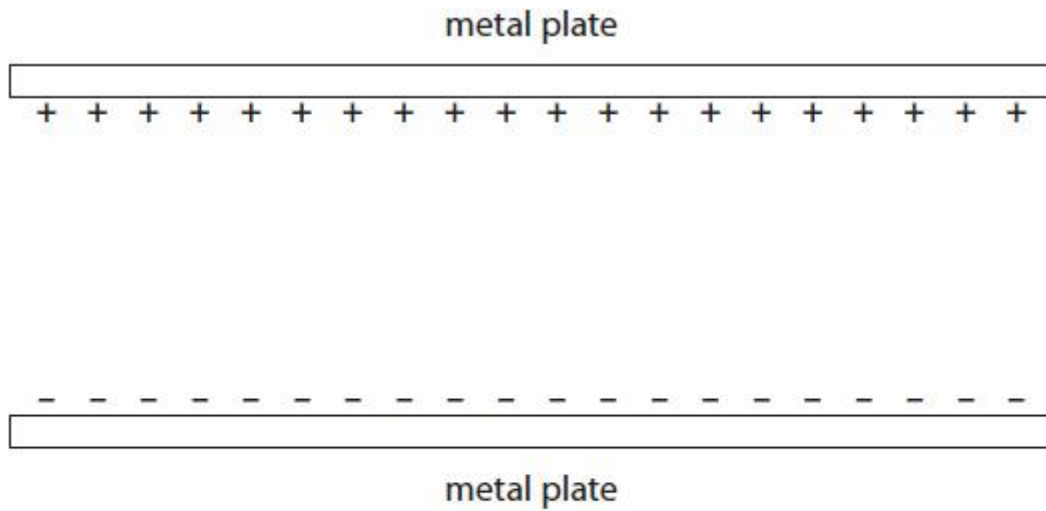
produced by friction between  
solid surfaces

**(Total for question = 3 marks)**

Q3.

Figure 15 shows two parallel metal plates.

The plates are charged using a very high voltage.



**Figure 15**

Draw on Figure 15 the shape and direction of the electric field **between** the plates.

(2)

**(Total for question = 2 marks)**

Q4.

An atom contains electrons, neutrons and protons.

\*The photographs show some electrostatic effects.



positively charged balloon near hair



positively charged rod near some paper



positively charged balloon near a thin stream of water

Explain in terms of electric charges how one of these effects is caused.  
You may include diagrams to help with your answers.

(6)

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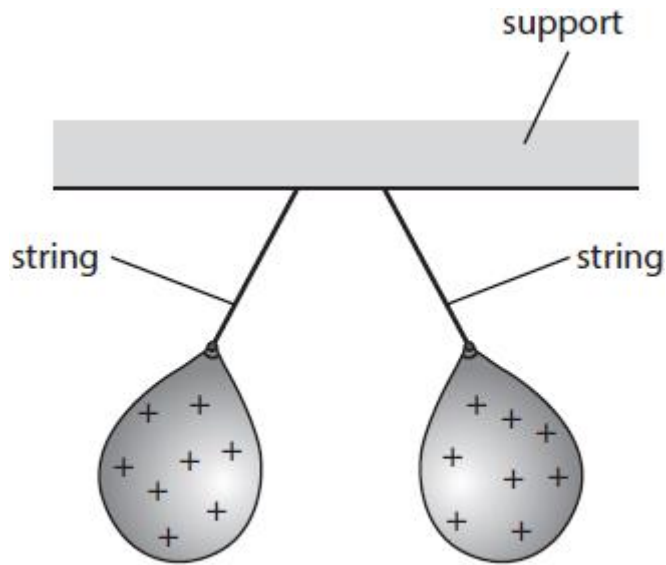
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Q5.

A student rubs **two** balloons with a dry cloth.

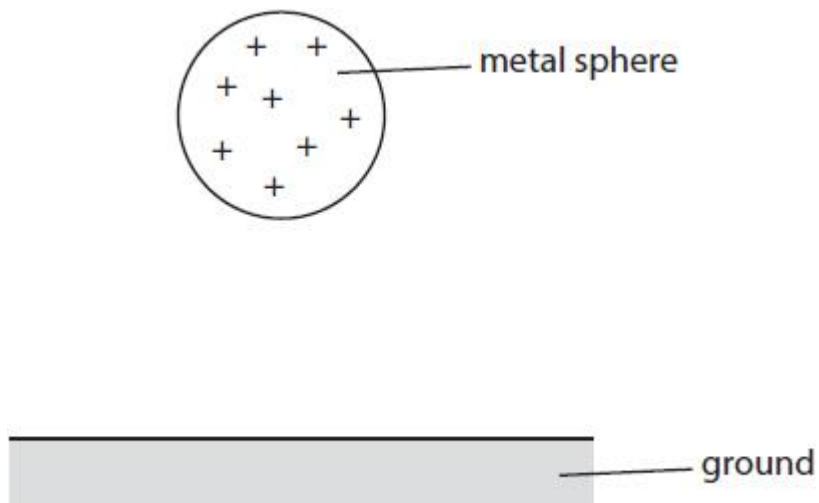
The balloons become positively charged.

The student hangs the charged balloons using strings, as shown in Figure 5.



**Figure 5**

Figure 7 shows a positively charged metal sphere above the ground.



**Figure 7**

The metal sphere can be discharged by connecting the sphere to the ground with a metal wire.

Explain how this would discharge the sphere.

(2)

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**(Total for question = 2 marks)**

Q6.

This question is about static electricity.

Figure 2 shows a person touching a charged dome.

The person's hair is standing on end.



Figure 2

(i) Explain how electric charge causes the hair to spread out, as shown in Figure 2.

(2)

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(ii) The person lets go of the charged dome.

The charge on the person's hair is  $10 \mu\text{C}$ .

The charge on the dome is  $25 \mu\text{C}$ .

Calculate the percentage of charge on the hair compared with on the dome.

Use the equation

$$\text{percentage of charge on the hair} = \frac{\text{charge on hair}}{\text{charge on dome}} \times 100$$

(2)

percentage of charge on the hair = ..... %

**(Total for question = 4 marks)**

Q7.

Explain how an aircraft can become electrically charged as it flies through the air.

(2)

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**(Total for question = 2 marks)**