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

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Name of the Student:_____
Max. Marks :18 Marks **Time : 18 Minutes**

Q1.

Figure 3 shows two charged metal plates.

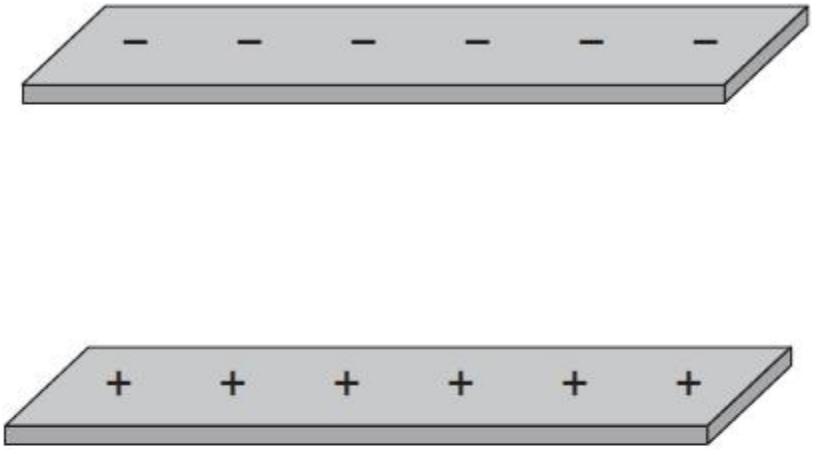


Figure 3

The top plate has a negative electric charge.

The bottom plate has a positive electric charge.

On Figure 3, draw the electric field lines between the two plates and show the direction of this electric field.

(Total for question = 2 marks)

Q2.

This question is about static electricity.

Draw on Figure 1 the shape and direction of the electric field due to the positive point charge.

(2)

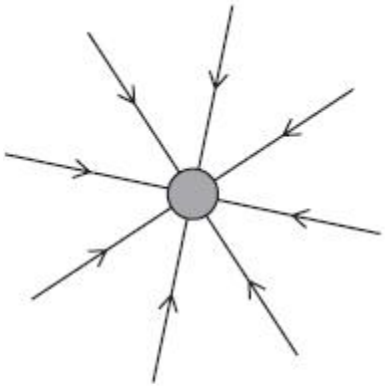
Figure 1

(Total for question = 2 marks)

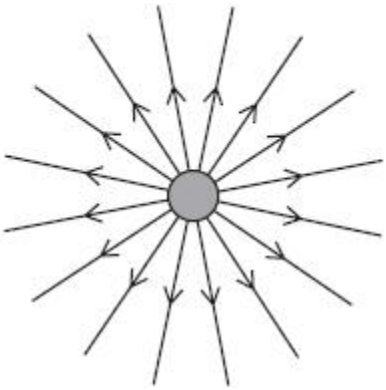
Q3.

Two small objects, P and Q, are each given an electric charge.

Figure 3 represents the electric fields around the objects, P and Q.



object P



object Q

Figure 3

(i) Use information from Figure 3 to give **two** differences between the charge on P and the charge on Q.

(2)

1 .....

.....

2 .....

.....

(ii) Object P and object Q are held near to each other so that their electric fields interact with each other.

State the effect that the electric field of object Q has on object P.

(1)

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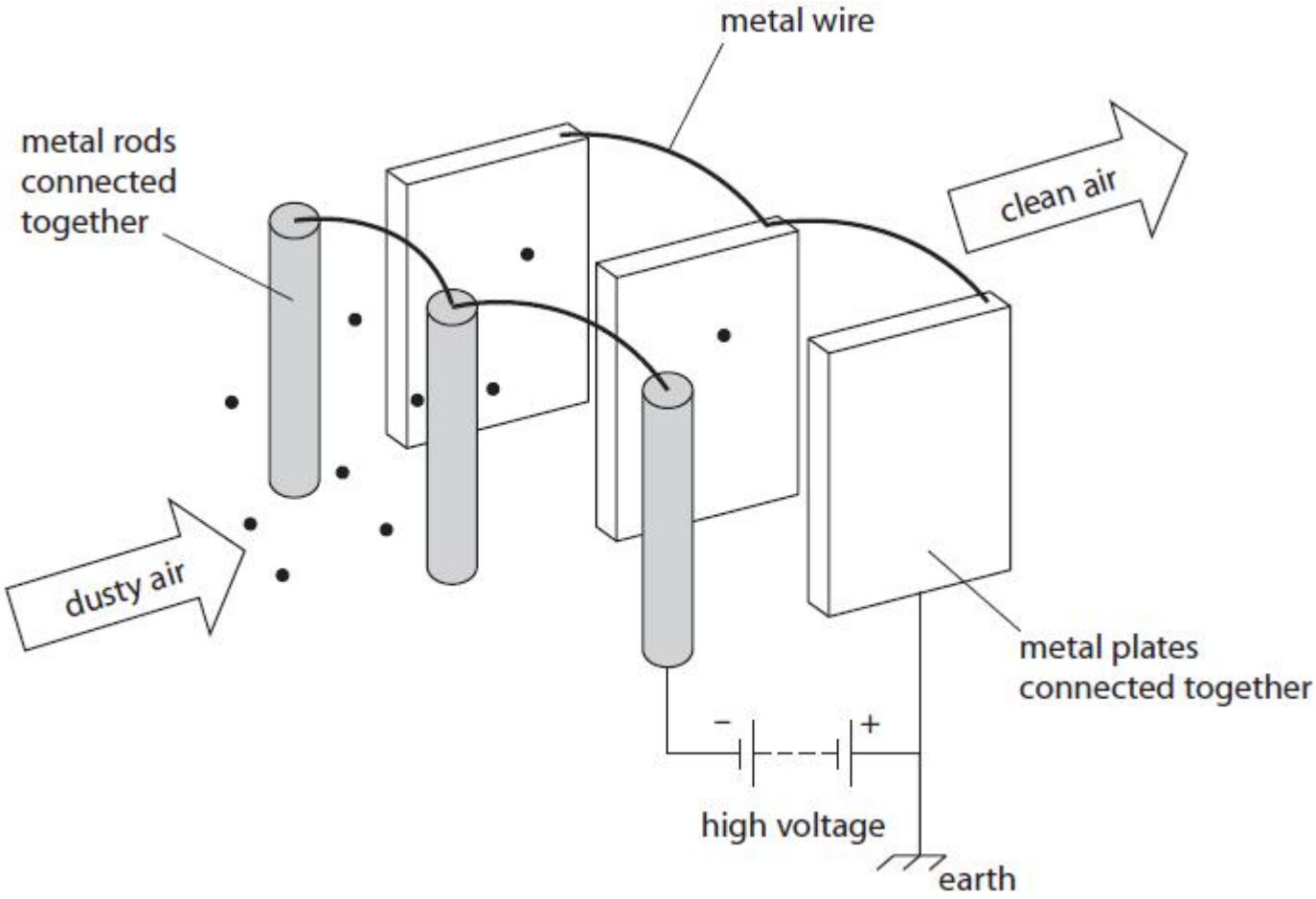
(Total for question = 3 marks)

Q4.

An electrostatic air filter is designed to remove dust particles from the air in a room.

A fan blows dusty air past several metal rods and metal plates.

There is a large potential difference (voltage) between the metal rods and the metal plates.



(a) Complete the sentence by putting a cross (☒) in the box next to your answer.

When dusty air goes past the metal rods, the dust particles become negatively charged.
This is because the dust particles

(1)

- ☐ **A** lose electrons
- ☐ **B** lose protons
- ☐ **C** gain electrons
- ☐ **D** gain protons

(b) When the dusty air flows past the metal plates, the dust particles settle on the metal plates.

Explain why the dust particles settle on the metal plates.

(2)

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(c) (i) State what happens to the charge on the dust particles when they settle on the metal plates.

(1)

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.....

(ii) Explain why the charge does not build up on the metal plates.

(2)

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.....

(d) There is a current of 1.2 mA in the circuit.

Calculate the charge transferred by this current in 40 s.
State the unit.

(3)

charge transferred = ... unit: .....

Q5.

Figure 9 shows an electrostatic method for spray-painting a car door.

The car door has a negative charge.

The droplets of paint receive a positive charge as they leave the spray gun.

(Source: © Jens Brüggemann/123RF)

Figure 9

Explain how charging the door helps the paint to form an even coating on both sides of the door.

You should use ideas of forces and fields in your answer.

(2)

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(Total for question = 2 marks)