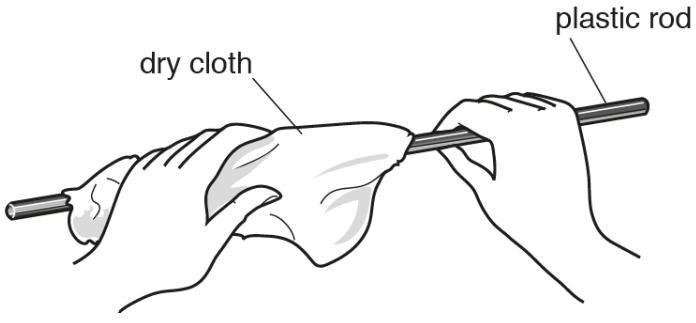
Electrostatics – 2019 June

1. 0625/31/M/J/19/No.8

(a) A student rubs a plastic rod with a dry cloth, as shown in Fig. 8.1. The rod becomes negatively charged.



(i) Use words from the box to complete the sentence.

air	cloth	electrons	hand	neutrons	protons

The rod becomes negatively charged because ..... move from the ..... to the rod.

[2]

(ii) The student moves the rod close to a suspended, charged rod. The two rods repel each other.

State the type of charge on the suspended rod.

..... [1]

(iii) Explain your answer to **(a)(ii)**.

.....

..... [1]

(b) A device has a metal case. Any charge on the case must be able to move to earth.

(i) Draw **one** ring around a material that is suitable for the connection to earth.

copper glass plastic rubber [1]

(ii) Explain your answer to **(b)(i)**.

.....

..... [1]

[Total: 6]

2. 0625/32/M/J/19/No.9

Fig. 9.1 shows a plastic ruler.

Fig. 9.1

(a) Suggest and explain how a student could give a positive charge to a plastic ruler.

.....

.....

..... [3]

(b) A plastic ruler is given a positive charge. A sphere hangs from an insulating thread.

A student holds the ruler near the sphere, as shown in Fig. 9.2. The ruler repels the sphere.

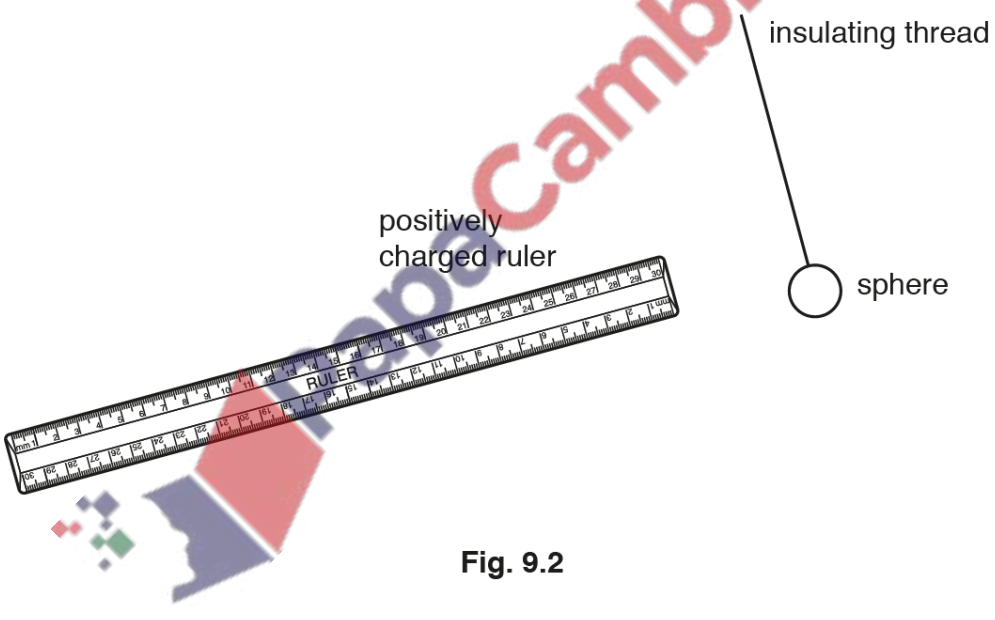


Fig. 9.2

(i) State what charge, if any, the sphere carries.

..... [1]

(ii) Explain your answer to **(b)(i)**.

..... [1]

[Total: 5]

3. 0625/32/F/M/19/No.10

Fig. 10.1 shows the apparatus for an experiment on electrostatics.

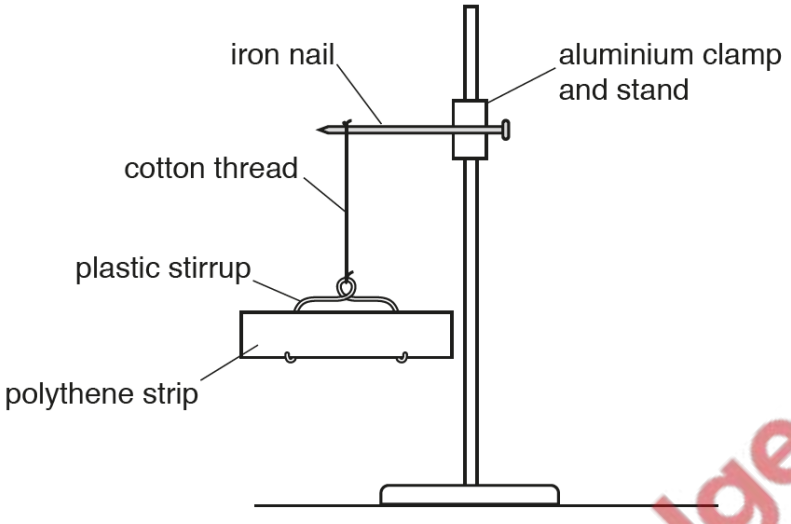


Fig. 10.1

(a) Identify the pieces of equipment that are electrical conductors and those that are electrical insulators. Draw a line from each piece of equipment to the correct box.

aluminium clamp and stand	conductor
plastic stirrup	
iron nail	insulator
cotton thread	

[1]

(b) State and explain how the polythene strip can be given a negative charge.

.....

.....

..... [2]

(c) Describe how the apparatus in Fig. 10.1 could be used to demonstrate that the polythene strip has a negative charge.

.....

.....

..... [2]

[Total: 5]