Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Q1.

A student rubbed a plastic rod with a cloth.

The rod became negatively charged and the cloth became positively charged.

(a) Explain why the cloth became positively charged.

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(3)

Figure 1 shows the negatively charged rod on a balance.

Figure 1

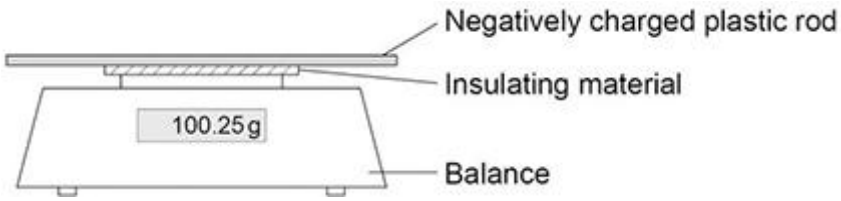
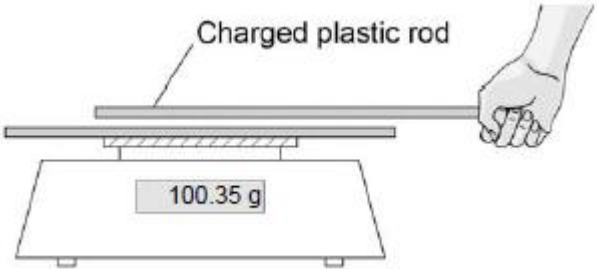


Figure 2 shows another charged rod being held stationary above the rod on the balance.

The rods do not touch each other.

Figure 2



(b) Explain why the reading on the balance increases.

_____

_____

_____

_____

_____

_____

(3)

(c) The balance had a zero error.

The zero error is not important in this experiment.

Give the reason why.

_____

_____

(1)

(d) A negatively charged rod is held near an earthed conductor.

Explain why a spark jumps between the negatively charged rod and the earthed conductor.

_____

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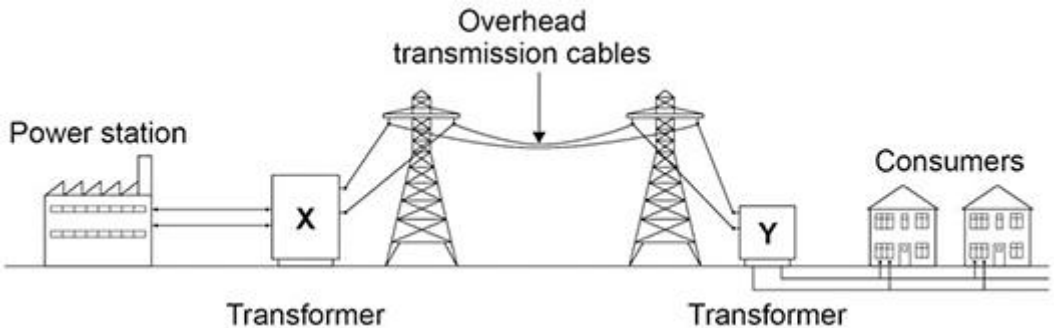
(3)
(Total 10 marks)

Q2.

The figure below shows how electricity is supplied to consumers by the National Grid.



(a) Explain why transformer **X** is used in the National Grid.

_____

(4)

(b) Explain why transformer **Y** is used in the National Grid.

(2)

(c) The town of Hornsdale in Australia has electricity supplied by a huge battery.

On one day the battery transferred 3.24×10^{11} J of energy to the town.

The potential difference of the town s electricity supply is 230 V.

Calculate the charge flow to the town on this day.

Use the Physics Equations Sheet.

Give your answer to **3** significant figures.

Charge flow (3 significant figures) = _____ C

(4)

(Total 10 marks)