4.2 Electrical Quantities

Question Paper

Course	CIE IGCSE Physics
Section	4. Electricity & Magnetism
Topic	4.2 Electrical Quantities
Difficulty	Medium

Time allowed: 10

Score: /5

Percentage: /100

Question 1

A PVC (plastic) rod is rubbed with a nylon cloth. This process causes electrons to be transferred between the rod and the cloth, causing both objects to become charged.

Which of the rows in the table below correctly gives the nature of the charges on both the cloth and the rod, and the effect the objects have on each other after becoming charged?

	Charges on rod and cloth	Effect
A	the same	repel
B	the same	attract
C	opposite	repel
D	opposite	attract

[1 mark]

Question 2

A student wants to charge up some rods by rubbing them with a cloth made from a suitable material.

He has a number of rods to choose from: a copper rod, a PVC rod, an aluminium rod and a glass rod.

Which two of the rods would hold a charge when rubbed with an appropriate cloth?

A. Aluminium and PVC

B. Glass and copper

C. Aluminium and copper

D. Glass and PVC

[1 mark]

Question 3

A student muses on the concept of the resistance of a wire.

She wonders whether changing the diameter of the wire and the length of the wire would affect the resistance.

Since you have studied this in physics, you know the answer!

Choose the row from the table in which changes are made to both the diameter and the length that would each **decrease** the resistance of a wire.

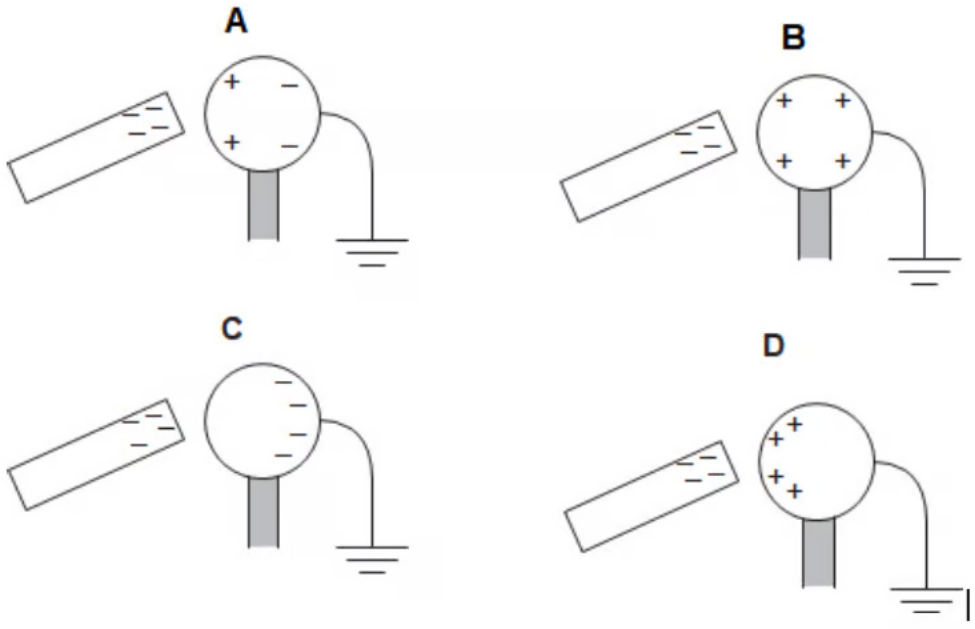
	Change to length	Change to diameter
A	increase	increase
B	increase	decrease
C	decrease	increase
D	decrease	decrease

[1 mark]

Question 4

A student rubs a polythene rod with a cloth, giving it a negative charge. She then holds it near an earthed, conducting sphere as shown in the diagrams below.

Which of the diagrams shows the correct distribution of charges on the conducting sphere?



[1 mark]

Question 5

A student has four copper wires, of different dimensions.

Which of her wires has the largest resistance?

	Length of wire / cm	Diameter of wire / mm
A	100	0.2
B	300	0.1
C	50	0.4
D	30	0.5

[1 mark]