Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Q1.

Figure 5 shows a metal chair being sprayed with paint.

The paint droplets come from a gun with an electric charge.

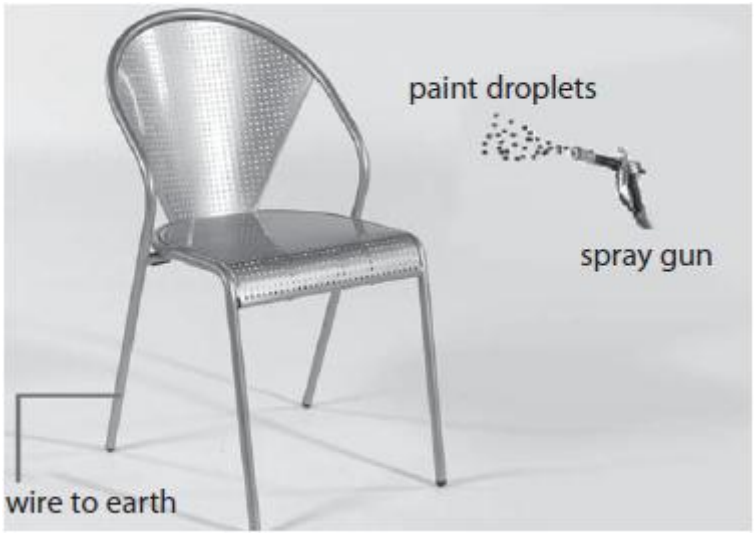

Figure 5

Inside the spray gun, electrons move along a charged wire towards the nozzle to charge the paint.

The charged paint droplets are sprayed from the nozzle.

The chair is connected to earth.

Which row of the table shows the correct combination of the charges as the charged paint droplets get near to the chair?

(1)

	paint droplets	chair
☒ **A**	negative	negative
☒ **B**	negative	positive
☒ **C**	positive	negative
☒ **D**	positive	positive

(Total for question = 1 mark)

Q2.

Answer the question with a cross in the box you think is correct (☒). If you change your mind about an answer, put a line through the box (☒) and then mark your new answer with a cross (☒).

This question is about static electricity and electric fields.

Figure 1 shows three charged objects, X, Y and Z.

Figure 1

Y has a positive charge and is held stationary.

The charge on Y causes X and Z to move in the directions of the arrows.

Which row of the table is correct for the charges on X and Z?

(1)

	charge on X	charge on Z
☐ **A**	negative	negative
☐ **B**	negative	positive
☐ **C**	positive	negative
☐ **D**	positive	positive

(Total for question = 1 mark)

Q3.

A battery sends a current through a metal wire.
Plastic is an insulator.
A student rubs a piece of plastic with a cloth.
This gives the plastic a negative charge.

(i) Explain how the plastic is charged by the rubbing.

(2)

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(ii) The cloth is also charged when it rubs against the plastic.

Describe the charge on the cloth.

(2)

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Q4.

Answer the question with a cross in the box you think is correct ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Figure 1 shows a prize that is made from a metal star on a plastic base.

Figure 1

A person starts to clean the prize by rubbing the plastic base with a dry cloth.

The plastic base becomes positively charged and the cloth becomes negatively charged.

(i) The plastic base has

(1)

- ☒ **A** gained electrons
- ☒ **B** gained protons
- ☒ **C** lost electrons
- ☒ **D** lost protons

(ii) Explain why the cloth has become negatively charged.

(2)

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(Total for question = 3 marks)

Q5.

A student rubs a plastic comb with a dry cloth to give the comb a positive electric charge.

Figure 6 shows the charged plastic comb picking up small pieces of paper.

(Source © GIPhotoStock/SCIENCE PHOTO LIBRARY)

Figure 6

(i) Explain how rubbing the comb with a dry cloth gives the comb a positive electric charge.

(3)

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(ii) Explain how the positively-charged plastic comb picks up the small pieces of paper.

(3)

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(Total for question = 6 marks)

Q6.

Glass is an insulator.

A student rubs a piece of glass with some silk.

The glass becomes positively charged.

(i) Explain how rubbing silk charges the glass.

(2)

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(ii) The silk is also charged when it rubs against the glass.

Explain how the silk becomes charged.

(2)

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(Total for question = 4 marks)