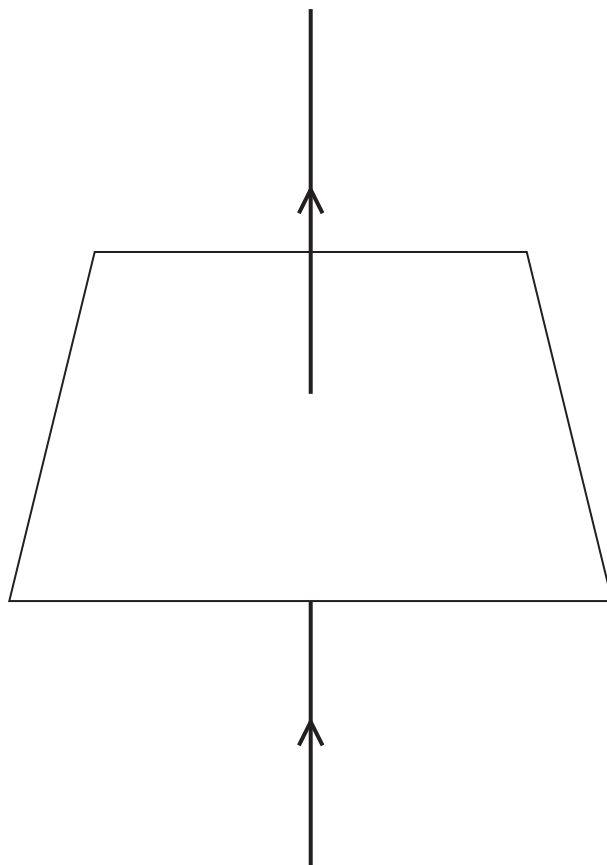


- 2 (a) A student passes a thick wire vertically through the centre of a horizontal card.

He then passes a current through the wire in an upwards direction, as shown in the diagram.



- (i) On the diagram, draw the shape and direction of the magnetic field produced by the current in the wire.

(3)

- (ii) Describe a method that the student could use to show that a magnetic field is produced by the current in the wire.

(2)

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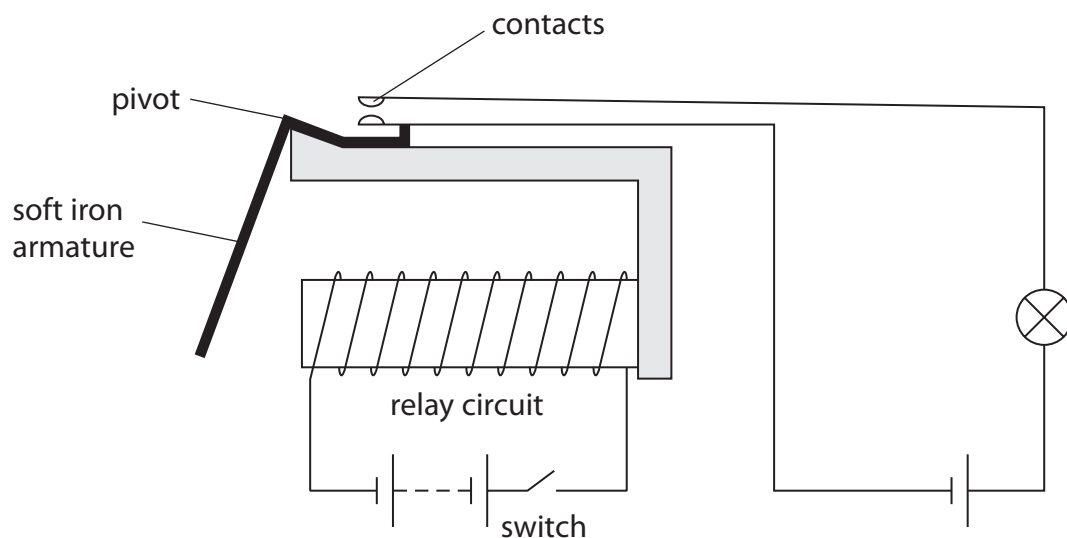
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P 4 8 0 8 5 A 0 5 2 0

- (b) In a relay, an electromagnet is used to operate a switch.

The diagram shows how the relay is used to turn a lamp on and off in another circuit.



- (i) The table gives some statements about how the relay works.

Put numbers in the boxes to show the correct order sequence needed to turn on the lamp.

One has been done for you.

(3)

Statements	Order
the switch is closed	
the lamp is on	6
the armature is attracted	
the contacts are pushed together	
the electromagnet is magnetised	
the armature rotates	



(ii) Explain why the lamp turns off when the switch is opened.

(2)

(Total for Question 2 = 10 marks)

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



P 4 8 0 8 5 A 0 7 2 0