Practice Question Set For GCSE
Subject : Physics
Paper-2 Topic : 12_Magnetism and the motor effect

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Name of the Student:_____
Max. Marks : 23 Marks **Time : 23 Minutes**

Q1.

A student uses iron filings to show the pattern of a magnetic field around a bar magnet.

Figure 2 shows the pattern the student produced.

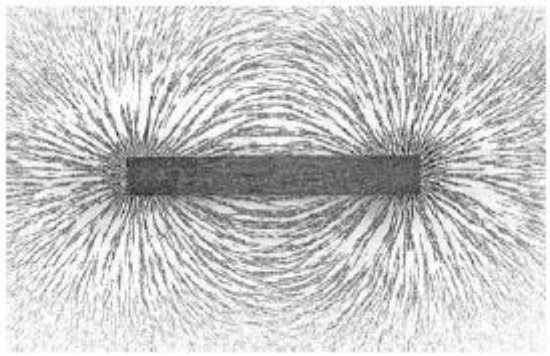


Figure 2

(i) Describe how you can tell from Figure 2 where the magnetic field is strongest.

(2)

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(ii) The bar magnet is placed on a sheet of paper. Describe how the student could plot the shape and show the direction of the magnetic field around the magnet.

(3)

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(Total for question = 5 marks)

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Q2.

Describe how you could show that the Earth has a magnetic field.

(2)

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(Total for question = 2 marks)

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Q3.

Figure 9 shows the magnetic field around a wire carrying a current.

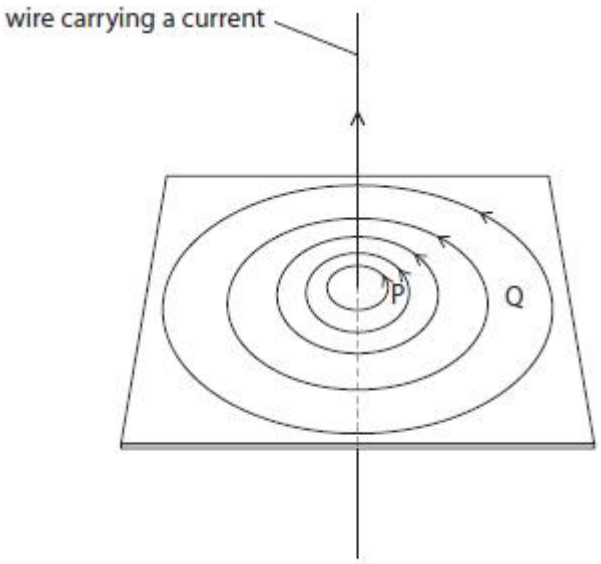


Figure 9

(i) State how you can tell from Figure 9 that the strength of the field is greater at P than at Q.

(1)

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(ii) The magnetic field strength is measured at P for different values of current in the wire.

The results of this investigation are shown in Figure 10.

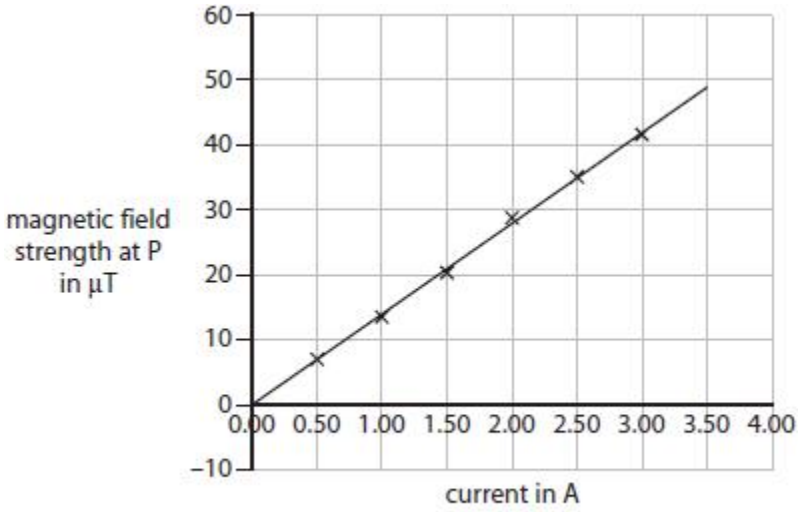


Figure 10

Describe the relationship between magnetic field strength and current.

(2)

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(Total for question = 3 marks)

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Q4.

A student places two magnets on a smooth bench.

The student holds the magnets close to each other, as shown in Figure 9.



Figure 9

(i) Draw some magnetic field lines on Figure 9 to show the shape of the magnetic field **between** the two magnets.

(2)

(ii) The student is holding the two magnets on the smooth bench.

State what would happen if the student let go of one of the magnets.

(1)

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.....

(Total for question = 3 marks)

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Q5.

Figure 8 shows the shape of the magnetic field lines around a bar magnet.

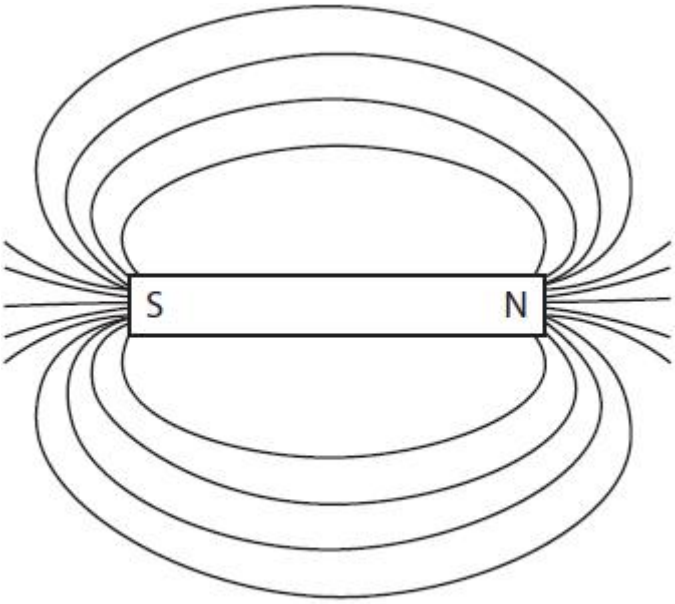


Figure 8

(i) Draw **one** arrow on a magnetic field line in Figure 8 to show the direction of that magnetic field line.

(1)

(ii) Draw an **X** on Figure 8 to show where the magnetic field is strongest.

(1)

(iii) Give a reason why Figure 8 shows the magnetic field is strongest at point **X**.

(1)

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(Total for question = 3 marks)

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Q6.

A teacher prepares some equipment to demonstrate electromagnetism.

Figure 9 shows the equipment.

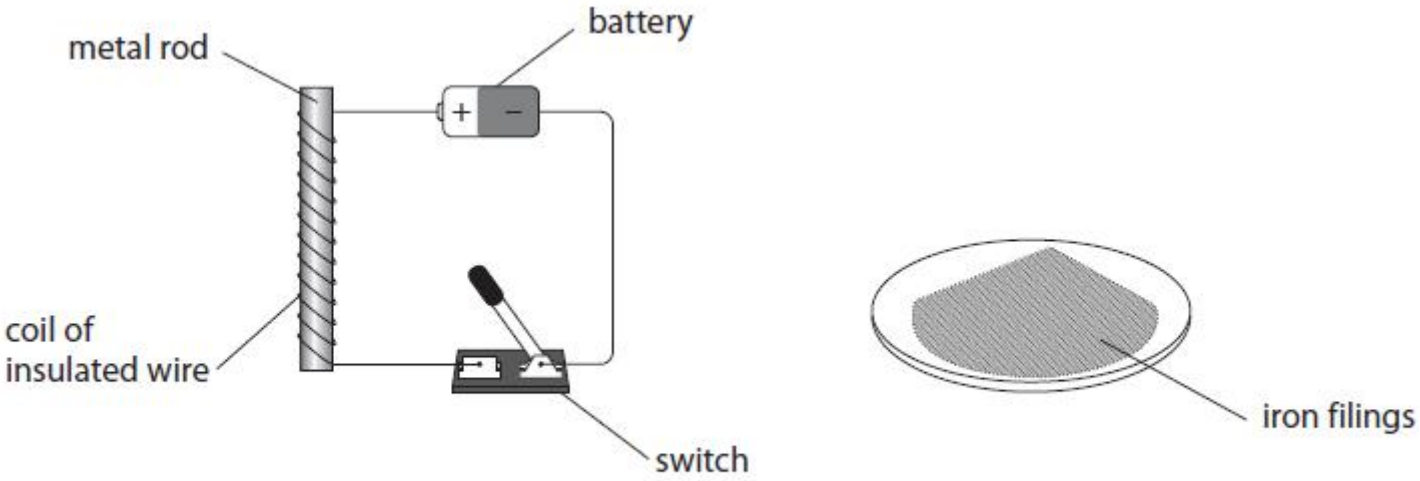


Figure 9

The teacher wants to show that iron filings

- are picked up by the metal rod when the switch is closed
- fall off the metal rod when the switch is opened again.

(i) Suggest a suitable metal for the rod.

(1)

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(ii) Give **two** reasons for your choice.

(2)

1 .....

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2 .....

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(Total for question = 3 marks)

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Q7.

Which of these materials would be the most suitable for making a temporary magnet?

(1)

- ☒ **A** copper
- ☒ **B** iron
- ☒ **C** plastic
- ☒ **D** steel

(Total for question = 1 mark)

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Q8.

A student uses a compass to investigate the magnetic field near a bar magnet.

The student places the compass near the bar magnet as shown in Figure 6.



Figure 6

(i) Mark the north pole of the bar magnet with an 'N' in Figure 6.

(1)

(ii) State two ways in which the investigation could be developed to show the shape of the magnetic field around the bar magnet.

You may add to Figure 6 to help with your answer.

(2)

1 .....

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2 .....

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(Total for question = 3 marks)

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