Simple Phenomena of Magnetism

Question Paper

Course	CIE IGCSE Physics
Section	4. Electricity & Magnetism
Topic	Simple Phenomena of Magnetism
Difficulty	Medium

Time Allowed 20

Score /10

Percentage /100

Question 1

A student makes a series of statements about a permanent bar magnet.

Which of them is true?

A. The North pole of a permanent bar magnet will repel the North pole of another magnet.

B. A permanent bar magnet must be made from a soft magnetic material.

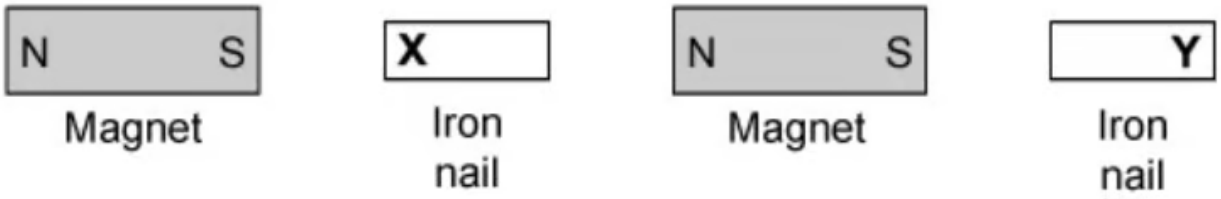
C. A permanent bar magnet can repel a magnetic material.

D. The field lines of a permanent bar magnet cross each other where the field is strongest.

[1 mark]

Question 2

A student lines up some permanent magnets with soft iron nails in between as shown in the diagram below.



What would the magnetic poles of locations **X** and **Y** be?

	X	Y
A	north	north
B	north	south
C	south	north
D	south	south

[1 mark]

Question 3

Which of the following statements could be used to describe something a permanent magnet could do?

A. It will repel non-magnetic materials.

B. It will repel non-ferrous materials.

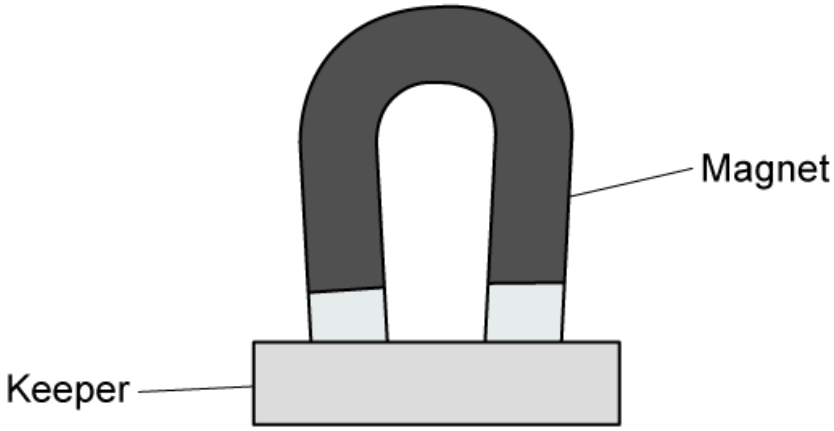
C. It will attract ferrous materials.

D. It will have a single magnetic pole.

[1 mark]

Question 4

The diagram shows two bar magnets, stored with metal keepers across the ends. The keepers help to keep the magnets magnetised.



The material used for the keepers becomes strongly magnetised when placed in contact with the magnets, but does not remain magnetised when taken away from the magnets.

What is a suitable metal to use for the magnets and what is a suitable metal to use for the keepers?

	Metal for keeper	Metal for magnet
A	steel	steel
B	iron	steel
C	steel	iron
D	iron	iron

[1 mark]

Question 5

Which test could be used to find which end of a magnet is the south pole?

A. putting it near a ferrous metal

B. putting it near a compass needle and see whether the needle points towards the pole

C. putting it near a compass needle and see whether the needle points away from the pole

D. putting it near a non-ferrous metal

[1 mark]

Question 6

A student makes an electromagnet by placing an iron rod inside a coil of wire and connecting the coil to a d.c. power supply, as shown in Fig. 9.2.

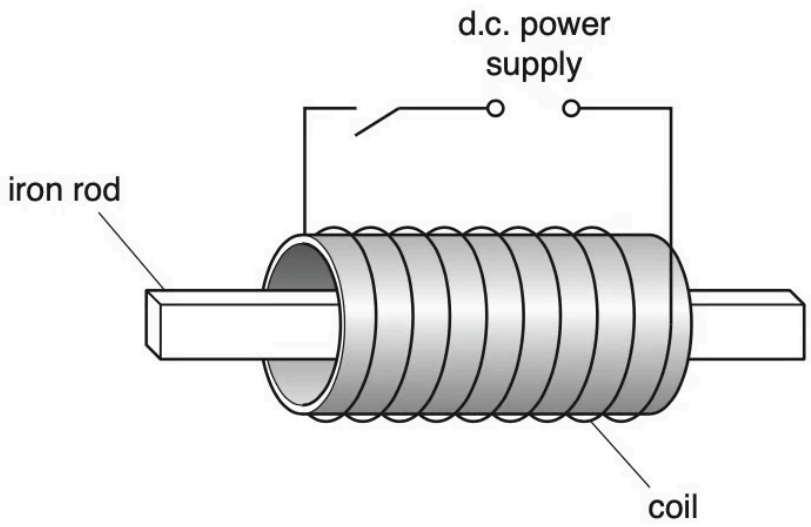


Fig. 9.2

(i) The switch is closed so there is a current in the coil. The S pole of a bar magnet is placed near to each end of the iron rod in turn.

Suggest what happens at each end of the iron rod and give a reason for your predictions.

[2]

(ii) The student removes the iron rod from the coil and replaces it with a steel rod. The student closes the switch and the steel rod becomes a magnet. The student then opens the switch.

The student removes the steel rod and moves it close to the iron rod.

Describe and explain what happens as the two rods are moved close together.

[2]

(iii) State **one** use for an electromagnet.

[1]

[5 marks]