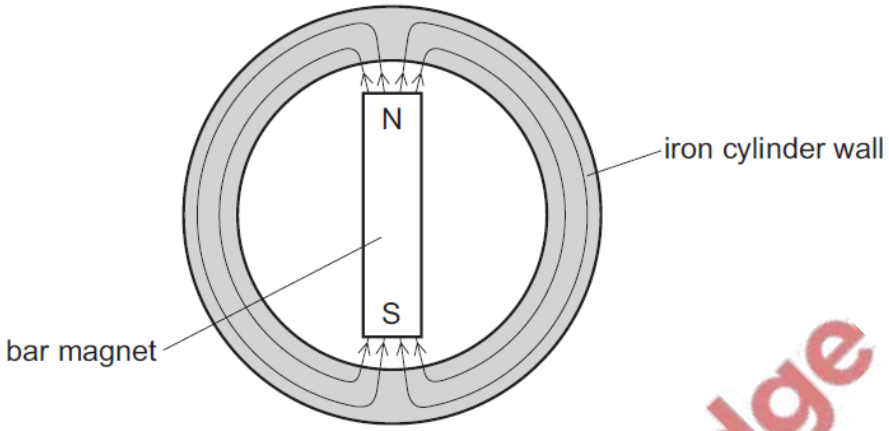
1. Nov/2020/Paper_11/No.32

A bar magnet is placed in a hollow iron cylinder. The diagram shows the magnetic field pattern produced.



What is the cause of the field inside the cylinder wall?

A electromagnetic generation

B electromagnetic induction

C electrostatic induction

D magnetic induction

2. Nov/2020/Paper_22/No.9a,9b

Fig. 9.1 shows a permanent magnet lying on a piece of paper.

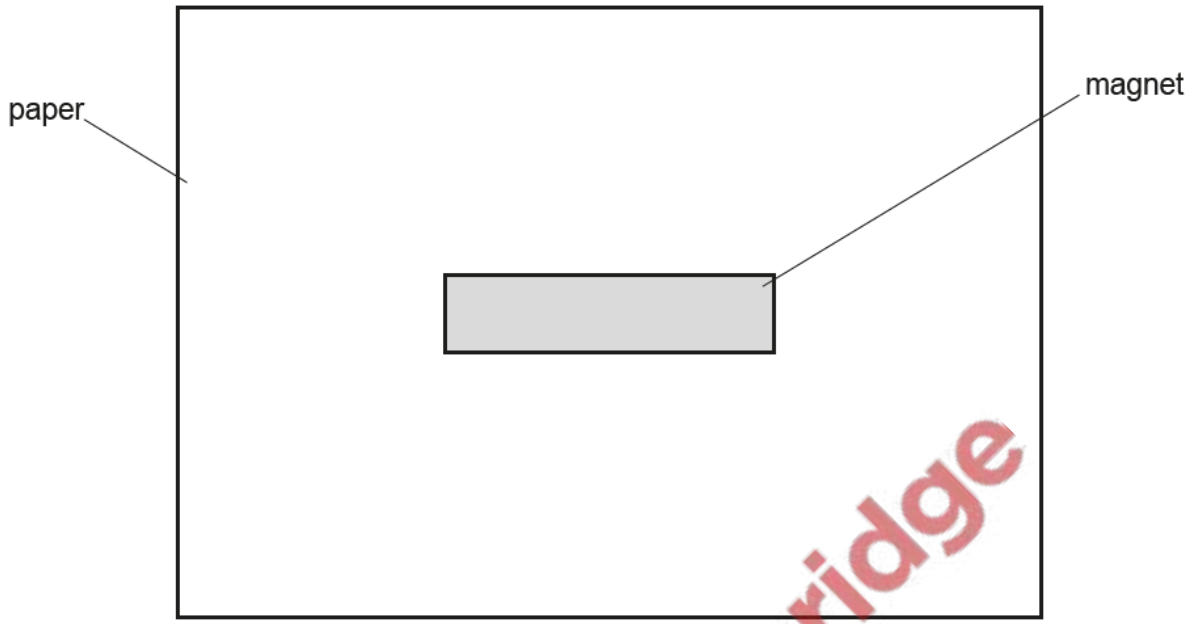


Fig. 9.1

(a) Underline the material in the list from which it is possible to make a strong, permanent magnet.

aluminium **copper** **glass** **iron** **mercury** **plastic** **steel**

[1]

(b) Describe an experiment to plot the pattern and the direction of the magnetic field surrounding the magnet. You may draw on Fig. 9.1, if you wish.

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..... [4]

3. June/2020/Paper_11/No.32

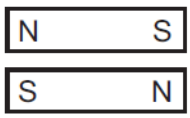
Bar magnets and various non-magnetic and demagnetised metal bars are placed in the different arrangements shown.

In which arrangement do the bars repel?

A

B

C



D

4. June/2020/Paper_22/No.9b,9c

(b) Fig. 9.2 shows the coil of wire wrapped around a cardboard tube. There is no core.

There is an electric current in the wire in the direction shown by the arrows.

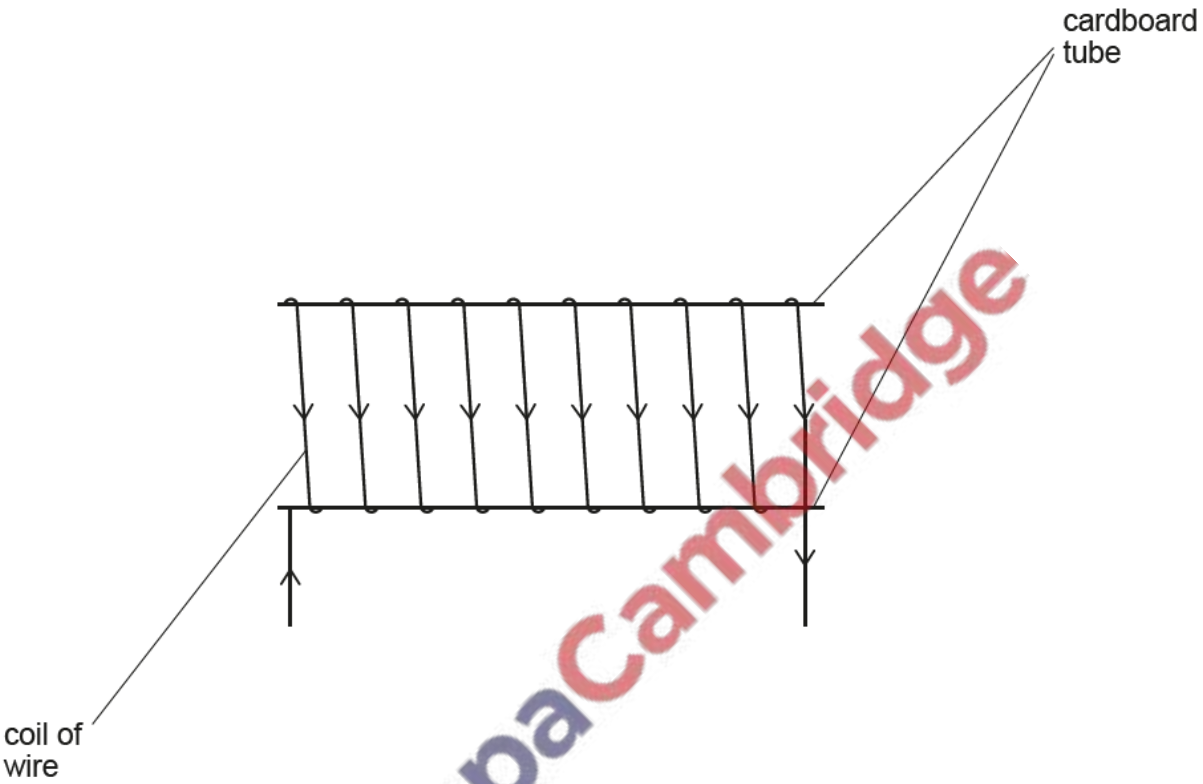


Fig. 9.2

(i) On Fig. 9.2, draw the pattern of the magnetic field inside and around the coil. Mark the direction of this magnetic field. [4]

(ii) On Fig. 9.2, mark the N-pole of the coil. [1]

(c) The supply of current to the coil is removed.

The ends of the coil are connected to a sensitive ammeter, as shown in Fig. 9.3.

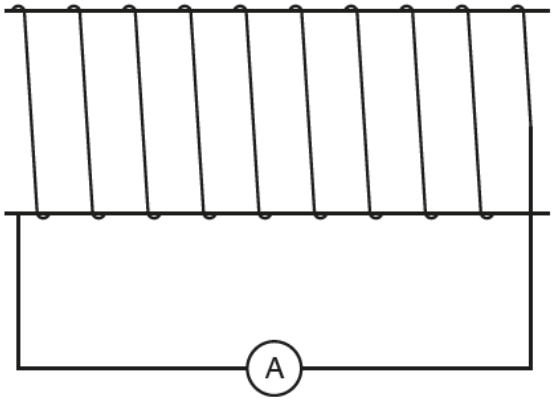


Fig. 9.3

(i) Describe **how** a permanent magnet is used to produce a **large** reading on the ammeter.

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..... [2]

(ii) Explain **why** a current is produced in **(i)**.

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..... [2]