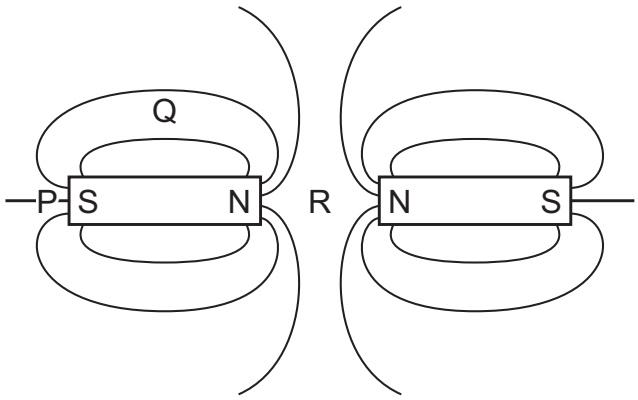
24 The diagram shows part of the magnetic field around two magnets.



Which list gives the order of magnetic field strengths at the positions P, Q and R, from weakest to strongest?

A P → Q → R

B P → R → Q

C Q → P → R

D R → Q → P

24 Which statements about magnets are correct?

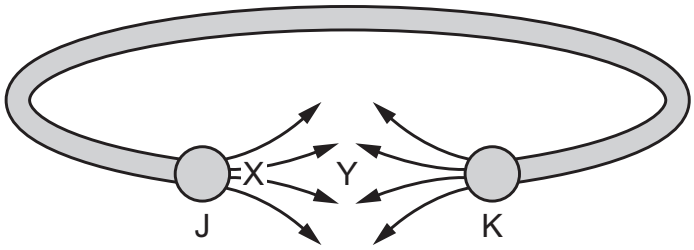
1 Permanent magnets are made of steel.

2 Electromagnets are temporary magnets.

3 A magnet can be used to induce magnetism in an iron bar.

A 1, 2 and 3 **B** 1 and 2 only **C** 1 and 3 only **D** 2 and 3 only

24 The diagram shows a bracelet containing two magnets. The arrows represent the pattern and the direction of the magnetic field due to the magnets.



Which row identifies the magnetic pole at J, the magnetic pole at K and where the magnetic field is the strongest?

	magnetic pole at J	magnetic pole at K	where the magnetic field is the strongest
A	N	N	X
B	N	N	Y
C	S	S	X
D	S	S	Y

6 Fig. 6.1 shows a person using a magnetic window cleaner. The part on the outside of the window is attracted to the inside part through the glass window.

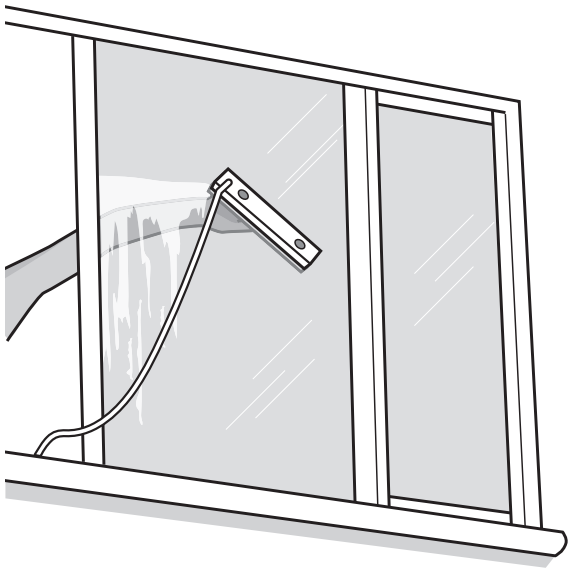


Fig. 6.1

Each part of the window cleaner contains two magnets. Fig. 6.2 shows the magnetic field between the parts of the window cleaner.

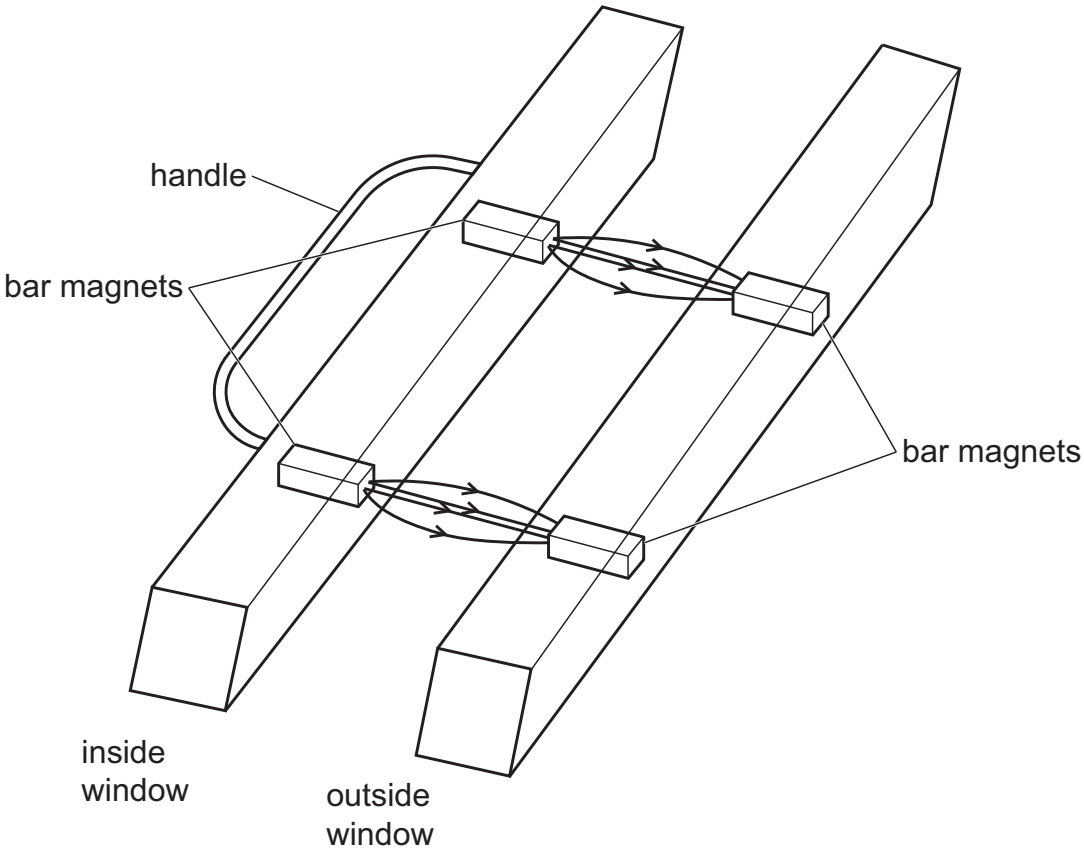


Fig. 6.2

(a) Glass is **not** a magnetic material.

State the difference between magnetic and non-magnetic materials.

.....

..... [1]

(b) Suggest a suitable material for the magnets in the window cleaner. Explain your answer.

.....

..... [1]

(c) Label the poles of the magnets in Fig. 6.2. [1]

(d) State how the field lines in Fig. 6.2 show different strengths of the magnetic field between the magnets.

.....

..... [1]

[Total: 4]

IGCSE Physics: **s24 21**

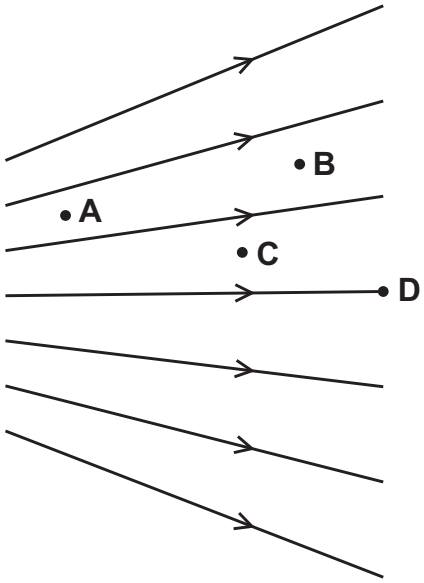
24 Which row describes suitable materials for use in a temporary magnet and in a permanent magnet?

	temporary magnet	permanent magnet
A	soft iron	soft iron
B	soft iron	steel
C	steel	soft iron
D	steel	steel

IGCSE Physics: **s24 21**

25 A magnetic field is represented in the diagram by magnetic field lines.

At which point is the magnetic field strongest?



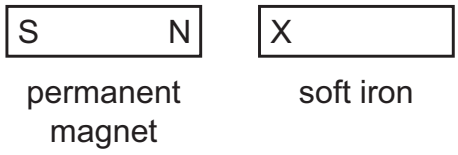
IGCSE Physics: **w23 21**

24 Which metal could be used for a permanent magnet and which metal could be used for the core of an electromagnet?

	permanent magnet	core of electromagnet
A	iron	copper
B	iron	steel
C	steel	copper
D	steel	iron

IGCSE Physics: **s23 21**

23 An unmagnetised piece of soft iron is placed close to a strong permanent magnet, as shown.



What is the induced polarity of end X of the soft iron and in which direction does the magnetic force act on the soft iron?

	polarity of end X	direction of force on the soft iron
A	N	to the left
B	N	to the right
C	S	to the left
D	S	to the right