13 Fun with Magnets

Multiple Choice Questions

1. Observe the pictures A and B given in Fig. 13.1 carefully.

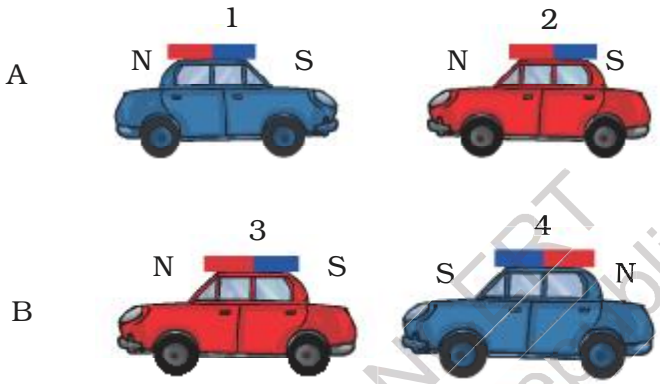


Fig. 13.1

Which of the following statement is correct for the above given pictures?

(a) In A, cars 1 and 2 will come closer and in B, cars 3 and 4 will come closer.

(b) In A, cars 1 and 2 will move away from each other and in B, cars 3 and 4 will move away.

(c) In A, cars 1 and 2 will move away and in B, 3 and 4 will come closer to each other.

(d) In A, cars 1 and 2 will come closer to each other and in B, 3 and 4 will move away from each other.

2. The arrangement to store two magnets is shown by figures (a), (b), (c) and (d) in Fig. 13.2. Which one of them is the correct arrangement?

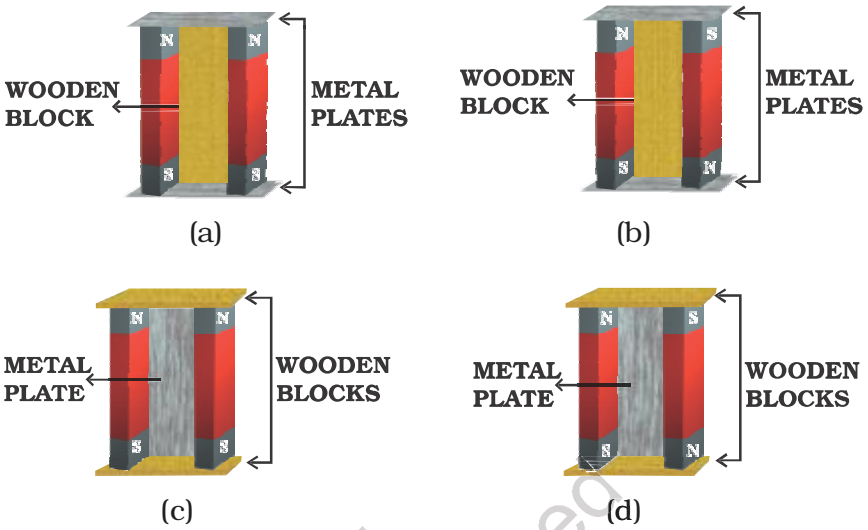


Fig. 13.2

3. Three magnets A, B and C were dipped one by one in a heap of iron filing. Fig. 13.3 shows the amount of the iron filing sticking to them.

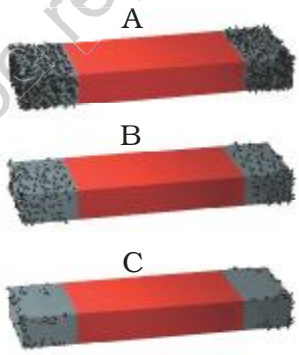


Fig. 13.3

The strength of these magnets will be

(a) A > B > C

(b) A < B < C

(c) A = B = C

(d) A < B > C

4. North pole of a magnet can be identified by

   (a) Another magnet having its poles marked as North pole and South pole.

   (b) Another magnet no matter whether the poles are marked or not.

   (c) Using an iron bar.

   (d) Using iron filings.

5. A bar magnet is immersed in a heap of iron filings and pulled out. The amount of iron filling clinging to the

   (a) North pole is almost equal to the south pole.

   (b) North pole is much more than the south pole.

   (c) North pole is much less than the south pole.

   (d) Magnet will be same all along its length.

VERY SHORT ANSWER QUESTIONS

6. Fill in the blanks

   (i) When a bar magnet is broken; each of the broken part will have ..... pole/poles.

   (ii) In a bar magnet, magnetic attraction is ..... near its ends.

7. Paheli and her friends were decorating the class bulletin board. She dropped the box of stainless steel pins by mistake. She tried to collect the pins using a magnet. She could not succeed. What could be the reason for this?

8. How will you test that 'tea dust' is not adulterated with iron powder?

9. Boojho dipped a bar magnet in a heap of iron filings and pulled it out. He found that iron filings got stuck to the magnet as shown in Fig. 13.4.

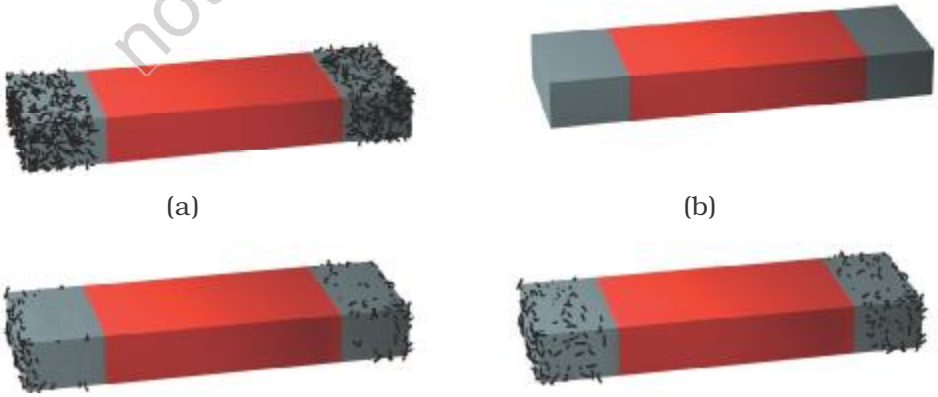
Fig. 13.4

(i) Which regions of the magnet have more iron filings sticking to it?

(ii) What are these regions called?

SHORT ANSWER QUESTIONS

10. Four identical iron bars were dipped in a heap of iron filings one by one. Fig. 13.5 shows the amount of iron filings sticking to each of them.



(a) (b)

(c) (d)

Fig. 13.5

(a) Which of the iron bar is likely to be the strongest magnet?

(b) Which of the iron bars is not a magnet? Justify your answer.

11. A toy car has a bar magnet laid hidden inside its body along its length. Using another magnet how will you find out which pole of the magnet is facing the front of the car?

12. Match **Column I** with **Column II** (One option of A can match with more than one option of B)

COLUMN I	COLUMN II
(a) Magnet attracts	(i) rests along a particular direction
(b) Magnet can be repelled	(ii) iron
(c) Magnet if suspended freely	(iii) by another magnet
(d) Poles of the magnet can be identified by	(iv) iron filings

13. You are provided with two identical metal bars. One out of the two is a magnet. Suggest two ways to identify the magnet.

LONG ANSWER QUESTIONS

14. Three identical iron bars are kept on a table. Two out of three bars are magnets. In one of the magnet the North-South poles are marked. How will you find out which of the other two bars is a magnet? Identify the poles of this magnet.

15. Describe the steps involved in magnetising an iron strip with the help of a magnet.

16.

Fig. 13.6

Fig. 13.6 shows a magnetic campass. What will happen to the position of its needle if you bring a bar magnet near it? Draw a diagram to show the effect on the needle on bringing the bar magnet near it. Also draw the diagram to show the effect when the other end of the bar magnet is brought near it.

17. Suggest an activity to prepare a magnetic compass by using an iron needle and a bar magnet.

18. Boojho kept a magnet close to an ordinary iron bar. He observed that the iron bar attracts a pin as shown in Fig. 13.7.

Fig. 13.7

What inference could he draw from this observation? Explain.

19. A bar magnet is cut into two pieces A and B, from the middle, as shown in Fig. 13.8.

Fig. 13.8

Will the two pieces act as individual magnets? Mark the poles of these two pieces. Suggest an activity to verify your answer.

20. Suggest an arrangement to store a U shaped magnet. How is this different from storing a pair of bar magnets?