

## CHAPTER – 10

### Fun with Magnets

#### Q. 1

Fill in the blanks in the following:

- i. Artificial magnets are made in different shapes such as \_\_\_\_\_ and \_\_\_\_\_.
- ii. The materials which are attracted towards a magnet are called \_\_\_\_\_.
- iii. Paper is not a \_\_\_\_\_ material.
- iv. In olden days, sailors used to find direction by suspending a piece of \_\_\_\_\_.
- v. A magnet always has \_\_\_\_\_ poles.

Answer:

- i. bar magnet, horse shoe, cylindrical
- ii. Magnetic
- iii. Magnetic
- iv. magnet
- v. two.

#### Q. 2

State whether the following statements are true or false:

- i. A cylindrical magnet has only one pole.
- ii. Artificial magnets were discovered in Greece.
- iii. Similar poles of a magnet repel each other.
- iv. Maximum iron filing stick in the middle of a bar

magnet when it is brought near them.

v. Bar magnets always point towards North-South direction.

vi. A compass can be used to find East-West direction at any place.

vii. Rubber is a magnetic material.

Answer:

i. False, each magnet has two poles i.e., north and south.

ii. True, it is said that first magnet was discovered by shepherd named magnes, who lived in Greece.

iii True, each magnet has two poles. Similar poles of a magnet repel each other.

iv. False, maximum iron filling get stick up at the two ends of the magnet.

v. True, Magnets always point towards North-south direction when suspended freely in the air.

vi. True, compass can used to find out direction at any place.

**Q.3**

It was observed that a pencil sharpener gets attracted by both the poles of a magnet although its body is made of plastic. Name a material that might have been used to make some part of it.

Answer:

A pencil sharpener gets attracted by both the poles of a magnet although its body is made up of plastic because some part of it is made up of Iron.

### Q. 4

Column I shows different positions in which one pole of a magnet is placed near that of the other. Column II indicates the resulting action between them for each situation. Fill in the blanks.

Answer:

Column I	Column II
N-N	Repulsion
N-S	Attraction
S-N	Attraction
S-S	Repulsion

### Q. 5

Write any two properties of a magnet.

Answer:

Properties of a magnet:

- i. Magnet has two poles- North and South.
- ii. Freely Suspended Magnet always align in **North-South** direction.
- iii. Magnet attracts materials like iron, nickel and cobalt known as magnetic materials
- iv. Opposite poles of two magnets attract each other whereas like poles repel each other.

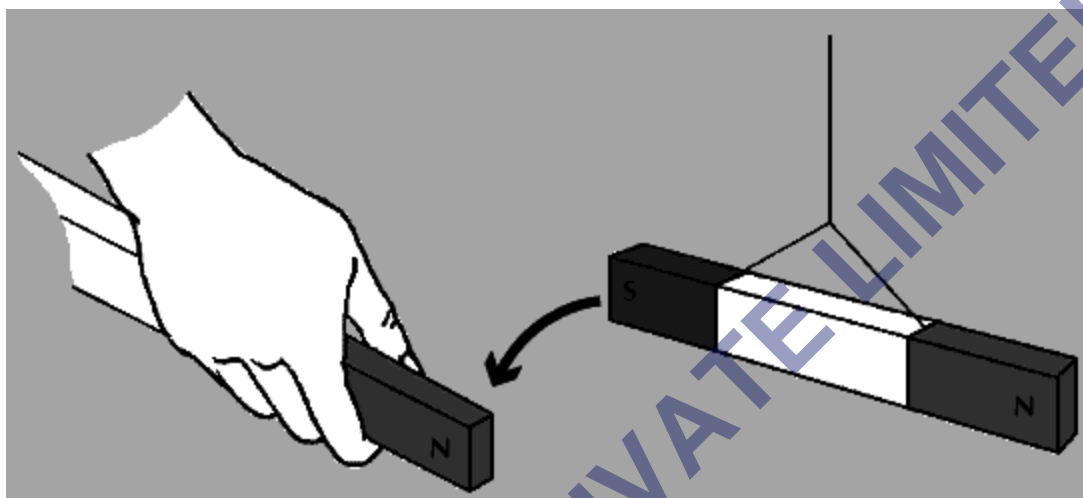


### Q. 6

Where are poles of a bar magnet located?

Answer:

Bar magnet has two poles which are located at two ends of the bar magnet. These two poles are: North pole and south pole. The figure given below shows how unlike poles (North & South) attract each other:



### Q. 7

A bar magnet has no markings to indicate its poles. How would you find out near which end is its north pole located?

Answer:

Magnets always point towards North-south direction when suspended freely in the air. We can find out a direction by freely suspending a bar magnet. The end magnet of the magnet that point towards North is called North pole. The other pole that point towards the South is called South pole.

### Q. 8

You are given an iron strip. How will you make it into a magnet?

Answer:

To make iron strip into a magnet, we

1. Put an iron strip on the table.
2. Now, take a bar magnet and place one of its poles on one end of the iron strip. Without lifting the bar magnet, move it along the length of iron strip till we reach the other end.
3. Now, lift the magnet and bring the pole (the same pole we started with) to the same point of the iron strip from which we began.
4. **Repeat this process about 30-40 times.** Bring some iron fillings near the iron strip and if the strip attracts the fillings then we interpret that that iron strip has become a magnet.

### Q. 9

How is a compass used to find directions?

Answer:

A compass is usually a small box with a glass cover on it. It is always used to find directions. The compass always

shows North and South directions. The compass is kept at the place, where we wish to know the direction. Its needle indicates the North-South direction, when it comes to the rest. The compass is then rotated until the North and South marked on the dial are at the two ends of the needle.



### Q. 10

A magnet was brought from different directions towards a toy boat that has been floating in water in a tub. Affect observed in each case is stated in Column I. Possible reasons for the observed affects are mentioned in Column II. Match the statements given in Column I with those in

## Column II.

Column I	Column II
i. Boat gets attracted towards the magnet	a. Boat is fitted with a magnet with north pole  towards its head
ii. Boat is not affected by the magnet	b. Boat is fitted with a magnet with south pole  towards its head
iii. Boat moves towards the magnet if north pole of the magnet is brought near its head	c. Boat has a small magnet fixed along its length
iv. Boat moves away from the magnet when north pole is brought near its head	d. Boat is made of magnetic
v. Boat floats without changing its direction	e. Boat is made up of non-magnetic material.



Answer:

Column I	Column II	Explanation
i. Boat gets attracted towards the magnet	d. Boat is made of magnetic material.	Magnetic attraction
ii. Boat is not affected by the magnet	e. Boat is made up of non-magnetic material.	Non-magnetic attraction
iii. Boat moves towards the magnet if north pole of the magnet is brought near its head	b. Boat is fitted with a magnet with south pole towards its head	Unlike poles attract each other.
iv. Boat moves away from the magnet when north pole is brought near its head	a. Boat is fitted with a magnet with north pole towards its head	Like poles repel each other.
v. Boat floats without changing its direction	c. Boat has a small magnet fixed along its length	Slight magnetic attraction

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