

Chapter 13: Magnetism

A. Tick (✓) the correct options.

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|--------|--------|--------|--------|--------|
| 1. (c) | 2. (b) | 3. (c) | 4. (c) | 5. (c) |
| 6. (a) | 7. (b) | | | |

B. Fill in the blanks.

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|------------------------|-----------------|---------|-------------------|
| 1. magnetic substances | 2. magnetic | 3. two | 4. repel, attract |
| 5. centre | 6. north, south | 7. lose | 8. directions |

C. Match the following.

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| 1. (d) | 2. (a) | 3. (b) | 4. (c) |
|--------|--------|--------|--------|

D. Very Short Answer Questions.

1. The poles of a bar magnet are located towards the ends of the magnet.
2. The two objects that are attracted by magnets are iron and steel.
3. Magnetite is a natural magnet.
4. On heating, the magnets lose their magnetic properties.

5. A magnetic compass works on the directive property of a magnet.
6. Magnetic keepers

E. Short Answer Questions.

1. The substances which are attracted by the magnets are called magnetic substances. Iron, steel, nickel and cobalt are examples of magnetic substances.
2. The substances that are not attracted by the magnets are called non-magnetic substances. Wood, stone, leather, plastic, aluminium and copper are non-magnetic substances.
3. Natural magnets are found in nature. Magnetite and lodestone are natural magnets. Natural magnets have generally low magnetic power and such magnets are not found at all places.

Artificial magnets are prepared by humans which can be used at any time and in any place. These magnets are much stronger than natural magnets. Artificial magnets may be rod-shaped, U-shaped or horseshoe-shaped.

4. A freely suspended magnet always rests pointing in the north-south direction. This property of a magnet is called directive property. The end of magnet that points towards the north is called the north pole of the magnet, the other end that points towards the south is called the south pole of the magnet.
5. (a) Attractive property of a magnet.
(b) Obedient and helping nature.
6. The three uses of magnets are :
 - (i) Motors, generators and loudspeakers have powerful magnets.
 - (ii) In scrap yards, magnets are used to separate iron and steel from junk materials.
 - (iii) Data, sound and images are stored on special surfaces coated with magnetic material in computer hard disks, floppies, audio and video tapes.
7. Two properties of a magnet are:
 - (i) A magnet can attract magnetic substances towards it. This property is called the attractive property of a magnet.
 - (ii) A freely suspended magnet always rests pointing in the north-south direction. This property of a magnet is called its directive property.
8. It is necessary to store magnets carefully because they tend to lose their magnetism after some time, if not stored properly.

F. Long Answer Questions.

1. To make a magnetic compass

Things needed: A sewing needle, a bar magnet, a cork, a cup and a rubber.

Method: We can magnetise a sewing needle using a bar magnet. Pass the magnetised needle through a small piece of cork or rubber. Place this cork containing the magnetised needle in a cup containing water. Make sure that the needle does not touch water. When the needle comes to rest, it points to the north-south direction. Rotate the cork with the needle inserted in it in different directions.

You observe that the needle always points in the north-south direction, when the cork stops rotating. The magnetic compass is ready for use.

2. (a) The ends of a magnet where the magnetic force is strongest, are called its poles. A magnet has always two poles.
- (b) The two poles of a magnet are near its free ends. The two poles of a magnet are always different. One pole of magnet is called the north pole and the other pole of magnet is called the south pole. The north pole of a magnet is represented by writing the letter N at one end and the south pole of the magnet is represented by writing S at the other end. The north and south poles of a magnet always exist together. It is impossible to have a magnet having only one pole.
- (c) (i) It repels the freely suspended magnet.
(ii) It attracts the freely suspended magnet.