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|  | <b>INDIAN SCHOOL AL WADI AL KABIR</b>        |                                       |  |
| <b>Class: VI</b>  | <b>DEPARTMENT: SCIENCE</b><br><b>2025-26</b> | <b>DATE: 18-11-2025</b>               |   |
| <b>WORKSHEET NO 8</b><br><b>WITH ANSWERS</b>                                      | <b>TOPIC: EXPLORING MAGNETS</b>              | <b>NOTE: A4 FILE</b><br><b>FORMAT</b> |   |
| <b>CLASS &amp; SEC:</b>   | <b>NAME OF THE STUDENT:</b>                  | <b>ROLL NO.</b>                       |   |

### I. OBJECTIVE-TYPE QUESTIONS:

1. Study the given statements.

- A magnetic compass is used to show directions.
- The needle of a compass is magnetic.
- The needle of a compass always indicates the N and the S directions of the earth.

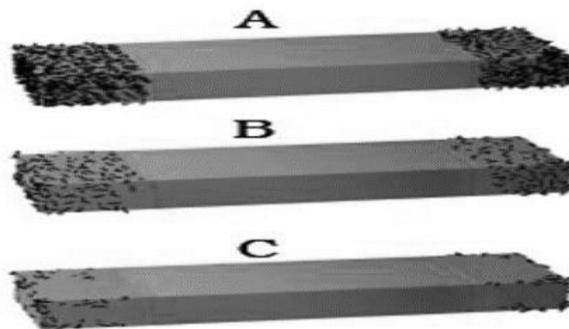
Identify the correct statements.

- only i) and ii)
- only ii) and iii)
- only i) and iii)
- all three.

2. Three magnets, A, B and C, were dipped one by one in a heap of iron filings. The given figure shows the amount of iron filings sticking to them.

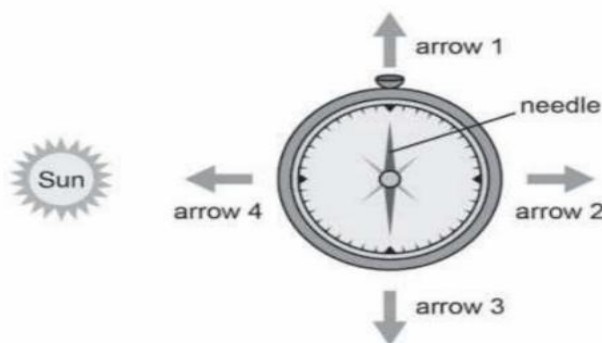
The strengths of these magnets will be:

- $A > B > C$
- $A < B < C$
- $A = B = C$
- $A < B > C$



3. The picture shows a magnetic compass and the Sun to its east. The four arrows point towards different directions. Which arrow is pointing towards the south?

- Arrow 1
- Arrow 2
- Arrow 3
- Arrow 4



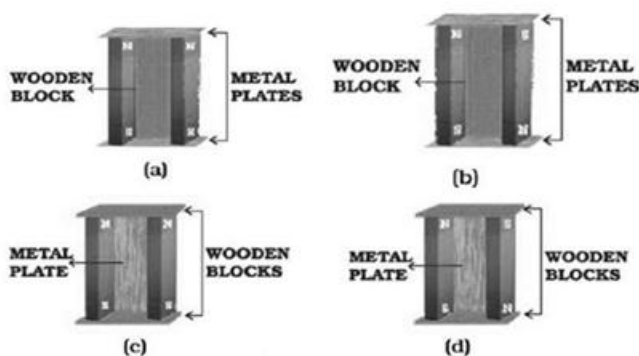
4. In an experiment, Aadhi places a small iron ball between three magnets of equal strength, as shown in the figure. The magnets are at equal distances from the ball. The ball will move towards a point:

- a) I
- b) II
- c) III
- d) IV



5. How is a compass useful to us?
- a) In finding the altitude of a place.
  - b) In finding only the north of a place.
  - c) In finding all the directions of a place.
  - d) In making artificial magnets.

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



7. Which of the following can be converted to a magnet?
- a) Plastic comb
  - b) Iron nail
  - c) Paper notebook
  - d) Silver ring

**For the following questions, two statements are given- one labelled Assertion (A) and the other labelled Reason (R). Select the correct answer to these questions from the codes (i), (ii), (iii), and (iv) as given below**

- i) Both A and R are true, and R is the correct explanation of the assertion.
- ii) Both A and R are true, but R is not the correct explanation of the assertion.
- iii) A is true, but R is false.
- iv) A is false, but R is true

8. **Assertion (A):** A freely suspended magnet rests along the North-South direction.  
**Reason (R):** A freely suspended magnet aligns itself with the Earth's magnetic field.
9. **Assertion (A):** Like poles of two magnets repel each other.  
**Reason (R):** Magnetic poles of similar types exert forces that push them apart.
10. **Assertion (A):** A Ring-shaped magnet does not have a north and south pole.  
**Reason (R):** Magnetite is a natural magnet.

## **II. VERY SHORT QUESTIONS (2M):**

1. a) Define magnet.

**[Hint: A magnet is a material that can attract materials made of iron, cobalt, steel or nickel.]**

- b) Write three properties of a magnet.

**[Hint:**

**Attractive Property: A magnet attracts materials like iron, nickel, and cobalt.**

**Directive Property: When freely suspended, a magnet aligns itself with the north-south direction.**

**Like Poles Repel, Unlike Poles Attract: When two magnets are brought close to each other, like poles (north-north or south-south) repel, while unlike poles (north-south) attract each other.**

2. Differentiate natural magnets and artificial magnets.

**[Hint: Natural magnets are those that occur in nature and have the property of attracting iron, cobalt, and nickel. Example: Magnetite**

**Magnets made by humans using magnetic substances are called artificial magnets. They are made in different shapes. Examples: Bar magnets, U-shaped magnets, and ring magnets.]**

3. a) Why should magnets be kept away from mobiles, computers and compact disks (CDs)?

**[Hint: Electrical appliances such as televisions, mobiles, CDs, and computers have magnetic storage devices inside them. When we bring external magnets near these appliances, the external magnets will interfere with the magnetic components of the appliances and may damage them.]**

- b) What is meant by the poles of a magnet?

**[Hint: The regions of a magnet where the attraction of the magnet is the strongest are called poles of the magnet.]**

4. How can magnets be used to separate junk from junkyards?

**[Hint: Magnets attract materials like iron, cobalt and nickel. In a junkyard, objects made of such magnetic material can be separated by causing them to be attracted to a strong magnet. Therefore, a crane with a strong magnet can be used to separate magnetic**

**materials from the junk.]**

5. How will you convert an iron nail into a magnet?

**[Hint: Take the iron nail and keep it on the table. Now, take a bar magnet and drag one end of the bar magnet over the iron nail from one end to the other. This process is repeated. The iron nail is converted into a magnet.]**

6. a) What is a lodestone?

**[Hint: Lodestone is the first natural magnet discovered by humans and was used to make early compasses because it always points towards the north–south direction.]**

b) Make a list of the given substances into two groups: magnetic and non-magnetic.  
Cobalt coin, Wood, Glass, Chalk, Iron nail, Paper, Nickel Key, Rubber, Steel spoon.

**[Hint:**

**Magnetic substances: Cobalt coin, Iron nail, Nickel Key, Steel spoon.**

**Non-magnetic substances: wood, glass, chalk, paper, rubber.]**

### **III. SHORT ANSWER TYPE QUESTIONS: (3M)**

1. a) It was observed that a magnet attracts a pencil sharpener, although its body is made of plastic. Name a material that might have been used to make some part of it.

**[Hint: The blade of a pencil sharpener is made of iron, which is a magnetic material. Due to this, a pencil sharpener gets attracted towards the poles of a magnet.]**

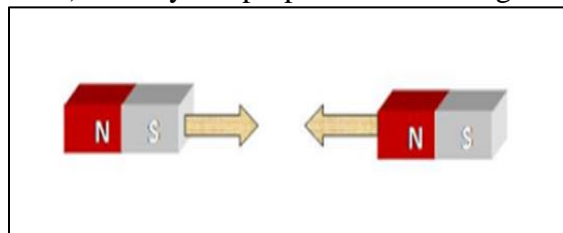
b) You are provided with two identical metal bars. One out of the two is a magnet. How would you identify the magnet?

**[Hint- Take some iron filings and move the iron bars over these iron filings. If iron filings are attracted very strongly to poles, then it is a magnet, and if they are not attracted, then it is simply an iron bar.]**

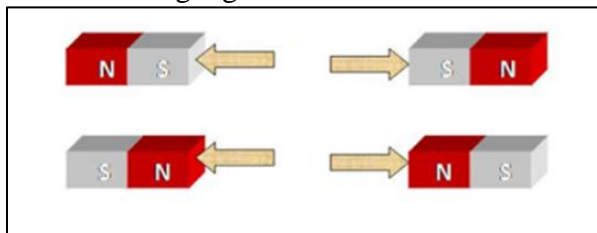
2. a) A bar magnet has no markings to indicate its poles. How can you find out the location of the North Pole?

**[Hint: The location of the poles of a magnet can be determined by suspending it freely. A freely suspended bar magnet always points in a north–south direction. The end that points towards the north direction is the north pole of the magnet, while the end that points towards the south direction is the south pole of the magnet.]**

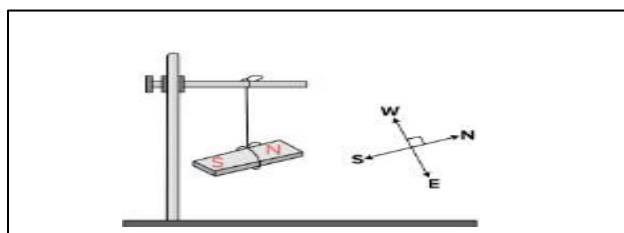
b) Identify the properties of the magnet shown in the following figures:



A



B



C

[Hint:

**A- Unlike Poles Attract**

**B- Like poles repel**

**C- When freely suspended, a magnet aligns itself with the north-south direction.]**

3. a) What will happen if a magnet is brought near a magnetic compass?

**[Hint: When a magnet is brought near a compass, then the magnet will attract or repel the magnetic needle of the compass, due to which the compass needle will be disturbed from its usual north-south direction. The compass needle will point in another direction.]**

b) How can you make a simple compass at home?

**[Hint: To make a simple compass at home, you can float a magnetised needle on a piece of cork in a bowl of water. The needle will align itself with the north-south direction.]**

4. Give a reason- Repulsion is the sure test for magnetism.

**[Hint: Attraction alone is not a definitive test for magnetism. A magnetic material (like iron) is attracted to both poles of a magnet, whether or not it is itself a magnet.**

**Repulsion, on the other hand, occurs only between two magnets when their like poles (north-north or south-south) face each other. If an object repels one pole of a known magnet, it confirms that the object itself is a magnet. Non-magnetic materials or magnetically induced materials cannot produce this effect. Thus, repulsion is the most reliable way to identify if an object is a magnet.]**

5. a) What is the correct way of storing bar magnets?

**[Hint: Two-bar magnets should be placed inside a wooden box so that:**

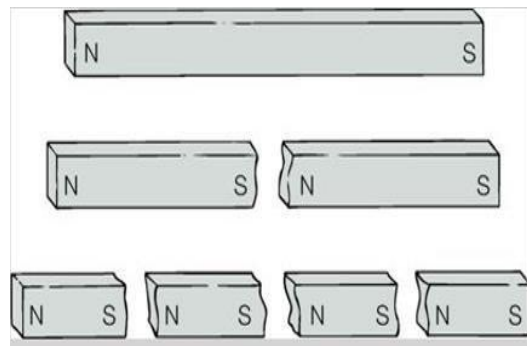
- **The poles of two magnets lie opposite to each other.**
- **They must be separated by a piece of wood, while two pieces of soft iron should be placed across their ends.]**

b) What should you avoid to keep magnets safe?

**[Hint: To keep magnets safe, we should avoid dropping them, heating them, and hammering them. Avoid keeping magnets near mobile phones or remote controls. Avoid storing magnets improperly.]**

6. a) What happens to the poles of a magnet when we break a magnet into two pieces?

**[Hint: The two poles of a magnet cannot exist independently. If we cut or break a magnet into two, we cannot isolate the North Pole and South Pole. We could get two pieces, each having a North pole and a South pole. Therefore, the two poles of a magnet are inseparable.]**



- b) When a U-shaped magnet is dipped in iron filings, no iron filings get attached to the bend portion. Why is it so?

**[Hint: Poles of the magnet have maximum magnetic properties]**

#### **IV. LONG ANSWER TYPE QUESTIONS. (5M):**

1. a) What is a compass? Describe the use of a compass.

**[Hint: A compass is a device that indicates direction. It is a small glass box with a magnetic needle placed on a dial. The magnetised needle is pivoted and can rotate freely. Usually, different colours are used to point the ends of the needle to identify the north and the south poles. The dial has directions marked on it. When the compass is kept at the position of rest, the needle points towards the north and south directions. This property is used in navigating directions.]**



- b) A magnetic compass is placed just beside a bar magnet. Will the compass now show directions correctly? Explain your answer.

**[Hint: No, the compass will not work properly due to the interference of the magnetic field of the bar magnet]**

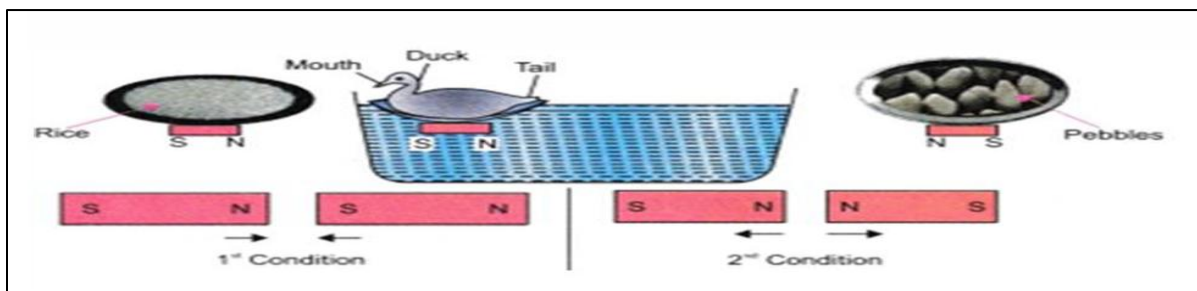
#### **V. SOURCE-BASED/ CASE STUDY-BASED QUESTIONS:**

*Read the following passage and answer the questions.*

1. Bhawana witnessed an interesting game at the fair. A duck was floating in a tub. When a plate containing some grains of rice was brought close to the duck, the duck moved towards the plate. But when a plate containing some pebbles was brought close to the duck, it moved away from the plate. Explain how this could have been possible.

**[Hint: This game is based on the plate containing rice, which may have a magnet attached to its bottom. The magnet is fitted in such a way that its north pole points towards rice grains, while the south pole indicates pebbles. A magnet (bar magnet) may also be fitted in the bottom of the duck, where the south pole points towards the mouth and the north pole towards the tail of the duck. When the rice portion of the plate is brought closer to the duck, the duck moves towards the rice grains because unlike poles of two magnets attract each**

other. In the second situation, the same (like) poles repel each other. So, the duck moves away.]



### **ANSWERS FOR OBJECTIVE TYPE QUESTIONS (1 to 10)**

1. (d) 2. (a) 3. (a) 4. (c) 5. (c) 6. (b) 7. (b) 8. (i) 9. (i) 10. (iv)

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