



Chapter-4

Exploring Magnets

Q.1 Write the summary of the chapter in the flow chart below, using the hints give below:

- 1. Magnet:** A magnet is a piece of material that have the property of attracting certain metals like iron, nickel etc.
- 2. Properties of magnet:**
 - a) A magnet has two poles ; N and S
 - b) Like poles repel each other
 - c) Magnetic force is maximum at centre and minimum at poles
 - d) Magnetic Monopole doesn't exist
- 3. Magnetic Compass:** It is an instrument used to find direction at a place. It is based on directive property of a magnet
- 4. Temporary & Permanent magnet:** Temporary It is the magnet that remains Magnetized for only a small time interval eg, Electromagnet Permanent - It is the magnet that retains its magnetism for a longer time. e.g; Natural Magnet
- 5. Precautions with magnet:** A magnet loses its magnetism heated, hammered or dropped from some height so they should be handled carefully.
- 6. Storing Magnets:** Magnets should be stored by using magnetic keepers towards poles of magnet.

Q2. Multiple Choice Questions

1. a) North South direction
2. d) Lodestone does not show magnetic properties.
3. d) permanent magnet
4. b)
5. a) One

Q3. Fill in the blanks:

1. Permanent magnets retain their **Magnetism** for long period of time.
2. Electromagnet is a **Temporary** magnet.
3. Like poles of a magnet **Repel** each other.
4. Magnets **lose** their magnetism if dropped from some height.
5. Artificial magnets can be **Temporary** as well as **permanent**

Q4. State whether the statements are 'True' or 'False'.

1. Magnetic compass is based on directive property. **True**
2. Unlike poles of the magnets repel each other. **False**
3. A freely suspended magnet always aligns itself in North South direction. **True**
4. Steel is a non-magnetic material. **False**
5. Bar magnet is an artificial magnet. **True**

Q5. Give one word for the following:

1. The magnet that remains magnetized for only short interval of time. **Temporary magnet**
2. The phenomenon in which permanent magnet loses its magnetism. **De-magnetisation**
3. Chemical formula of magnetite. **Fe_2O_3**
4. Another name of natural magnet. **Lodestone**
5. Instrument used to find direction. **Magnetic compass**

Q6. Match the columns:

	Column I	Column II
1.	Magnetic material	Nickel
	Non-Magnetic material	Copper
	One magnetic keeper	U shaped magnet
	Two magnetic keepers	Bar magnet

	Column I	Column II
2.	Like poles	Repel
	Unlike poles	Attract
	Magnetic compass	Directive property
	Cranes in junk yard	Attractive property

Q7. Assertion and Reason Questions

- (A) Both the assertion and reason are true, and the reason is the correct explanation.
- (B) Both the assertion and reason are true, but the reason is not the correct explanation.
- (C) The assertion is true, but the reason is false.
- (D) The assertion is false, but the reason is true.

Choose the correct options

1. **Assertion (A):** Assertion: Copper is a magnetic material.
Reason (R): A magnetic material is attracted by a magnet.

Ans (D) The assertion is false, but the reason is true.

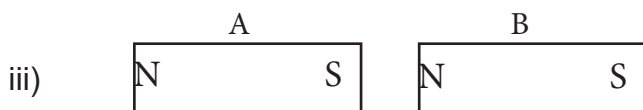
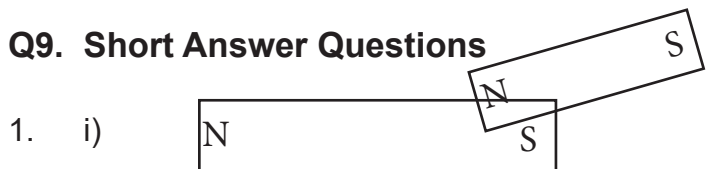
2. **Assertion (A):** A freely suspended magnet points N- S direction due to directive property.
Reason (R): Earth behaves like a huge bar magnet.

Ans (A) Both the assertion and reason are true, and the reason is the correct explanation.

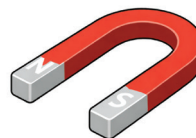
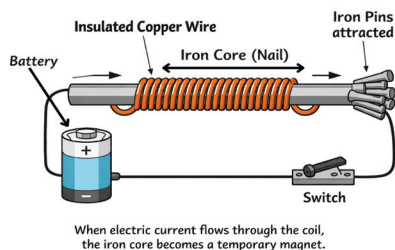
Q8. Very Short Answer Questions

1. **Name the device used to locate direction by the sailors. On which property of a magnet is it based?**
Magnetic Compass, Directive property
2. **Can the magnetic force pass through non-magnetic material?**
Yes
3. **Is magnetite a natural magnet? Give its another name.**
Yes, Lodestone
4. **What will happen if you drop a magnet from a height?**
It will lose its magnetism
5. **Why maximum iron filings stick to the ends of a bar magnet?**
Maximum attraction at poles

Q9. Short Answer Questions

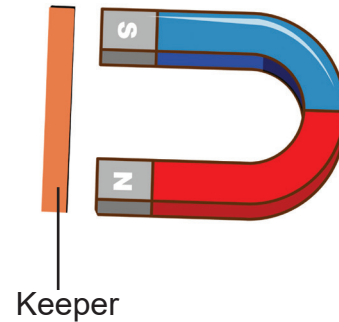
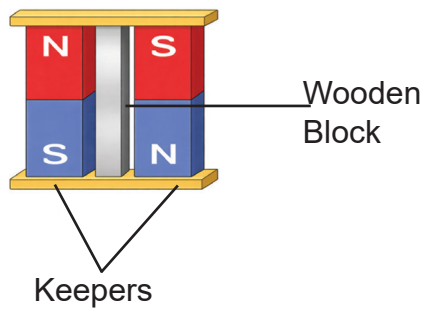


2.



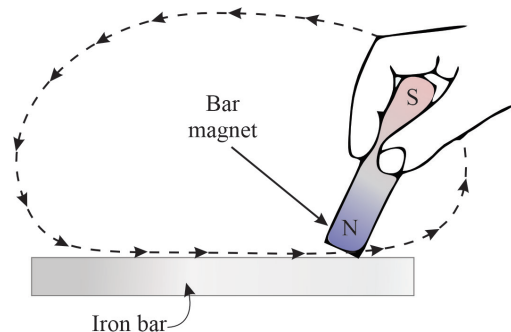
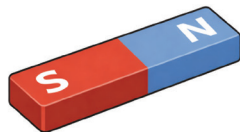
3. **To lift iron scrap**
Used in electronic devices
Magnetic Compass
Medical Diagnostic—MRI

4. Earth acts as a huge magnet, so a freely suspended magnets aligns it self with earth's magnetic fields.
- 5.



Q10. Long Answer Questions

1. You are given an iron strip and a bar magnet. How will you convert the iron strip into a magnet? Show with the help of diagram



You are given an iron strip and a bar magnet. How will you convert the iron strip into a magnet? Show with the help of diagram.

Take an iron bar Take a bar magnet and by touching one end to the iron bar and striking till the other. When it reaches other end, lift it up and bring the magnet to the same end and repeat the same process. Do this 30 to 40 times. The iron bar will behaveas a magnet

2. **Repulsion is a sure test of magnetism. Comment**

If we have to test magnetism, we bring a magnet and another iron piece which may or may not be magnetised if the magnet attracts one of the ends of iron pieces, it may or may not be magnetised but if there is repulsion at one end then the iron piece is also a magnet

Q11. Case Study Based Question

1. Rohan observed that no matter how we keep a magnetic compass, the needle always pointed in the same direction.He asked his father about it and his father told him about magnet and its properties.

- a) **What is a magnetic compass?**

A magnetic compass is a freely suspended magnetised needle which is based on di rective property of a magnet

- b) **Where is it used?**

It is used by sailors. pilots and explorers.

c) What is magnetism?

It is the property by which magnets attract iron or magnetic materials

Q12. Unjumble the words given in column II and write them in space provided with the help of images in column I, then match the columns:

	Column I	Column II
1.		Bar-Magnet
2.		Horse-shoe-magnet
3.		Magnetic compass
4.		Ring Magnet
5.		Magnetic Keeper

Q13. Fun Activity

Activity

Collect some materials like eraser, pencil, sharpener, Spoon, Alpin, Nails, Plastic scale, Screw etc. Take a magnet and identify the magnetic material

Magnetic material	Non magnetic material
Magnetic Sharpener Spoon Alpin Nail	Eraser Pencil plastic Scale screw