

SCIENCE

Chapter 13: Fun with Magnets



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Important Questions

Multiple Choice Questions:

Question 1. Which is an example of a magnetic substance?

- (a) Iron
- (b) Nickel
- (c) Cobalt
- (d) All of these

Question 2. Magnets have a shape

- (a) cylindrical
- (b) ball ended
- (c) horse shoe
- (d) all of these

Question 3. When a bar magnet is brought near iron dust, most of the dust sticks

- (a) near the middle
- (b) equally everywhere
- (c) near two ends
- (d) at the middle and ends

Question 4. A freely suspended bar magnet rests in

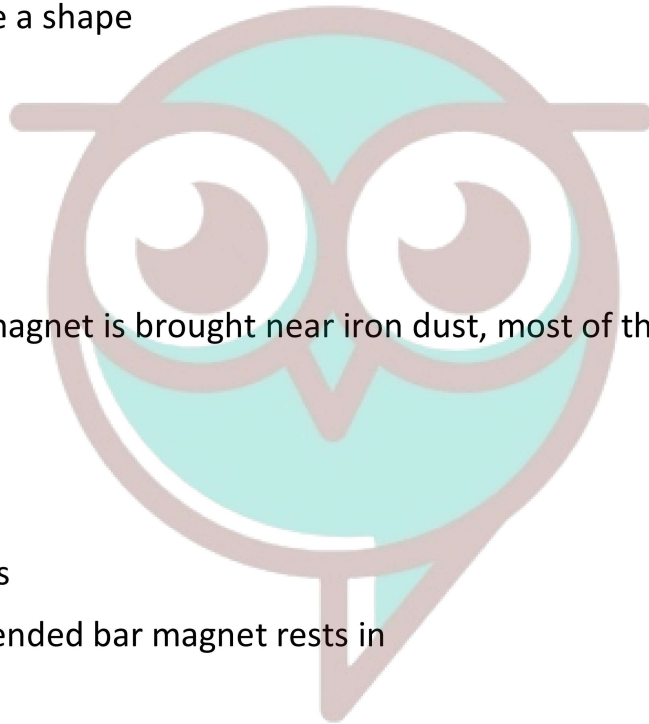
- (a) north-south directions
- (b) east-west directions
- (c) upside down
- (d) any direction by chance

Question 5. Attraction is seen between the poles of two bar magnets in the case of

- (a) N-pole of one magnet with N-pole of other
- (b) N-pole of one magnet with S-pole of other
- (c) S-pole of one magnet with S-pole of other
- (d) all of these cases will show attraction

Question 6. Which is a natural magnet?

- (a) Magnetite
- (b) Haemetite
- (c) Bakelite



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(d) Copper

Question 7. Choose the wrong statement

- (a) Heat can destroy magnetic properties of a magnet.
- (b) Magnets are made up of different materials and different shapes.
- (c) There is a maximum attraction in middle of a magnet.
- (d) Magnetite does not show magnetic properties.

Question 8. The magnetic properties of a magnet cannot be destroyed by

- (a) hammering
- (b) heating
- (c) dropping on a hard surface
- (d) boiling

Question 9. Which two ends of a magnet are called magnetic poles?

- (a) North pole
- (b) South pole
- (c) North and south pole
- (d) Self demagnetisation

Question 10. Magnets attract

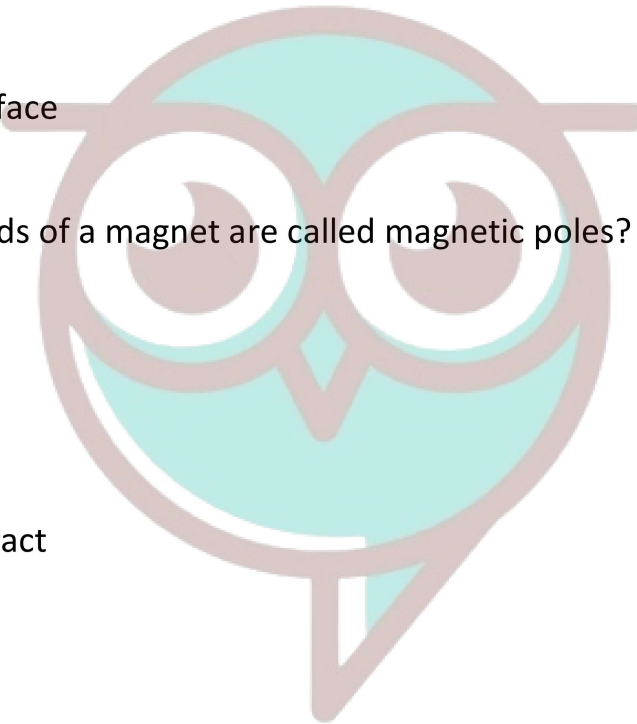
- (a) wood
- (b) plastic
- (c) paper
- (d) iron

Very Short Question:

1. Name the compound of iron contained in lode stone.
2. Name the shepherd after which magnet was named.
3. How can you separate a magnetic substance from a mixture?
4. At which place on a magnet, its magnetic force is maximum?
5. In which direction does a suspended magnet come to rest?
6. What happens when N-pole of a magnet is brought near the N-pole of a suspended magnet?

Short Questions:

1. Draw the diagram of (a) Bar magnet (b) Horse-shoe magnet.
2. Identify magnetic and non-magnetic substances from the list given below: Iron, Steel, Nickel,



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Plastic, Wood, Copper and a Stainless Steel spoon

3. Draw a diagram of a magnetic compass.
4. Write main properties of a magnet.
5. Write two methods by which a magnet can be demagnetised.
6. It is advised to keep the magnets away from television, mobiles, CD and computers Explain why?
7. Few iron nails and screws got mixed with the wooden shavings while a carpenter was working with them. How can you help him in getting the nails and screws back from the scrap without wasting his time in searching with his hands?
8. It is said that repulsion is a sure test for magnetism. Why is it so?

Long Questions:

1. Show that a magnet has two poles. What are the properties of the poles of a magnet?
2. How can you make an iron strip into a magnet?
3. How was magnet discovered?

Answer Key-

Multiple Choice Answers:

1. (d) All of these
2. (d) all of these
3. (c) near two ends
4. (a) north-south directions
5. (b) N-pole of one magnet with S-pole of other
6. (a) Magnetite
7. (d) Magnetite does not show magnetic properties.
8. (d) boiling
9. (c) North and south pole
10. (d) iron

Very Short Answers:

1. Answer: The compound of iron is iron oxide or magnetite.
2. Answer: Magnets.
3. Answer: By using a bar magnet, the magnetic substance is separated from mixture.
4. Answer: At poles.
5. Answer: Magnet comes to rest in N-S (north-south) direction.

6. Answer: There is repulsion between these two magnets as there is repulsion between like poles.

Short Answer:

1. Answer:

Bar Magnet

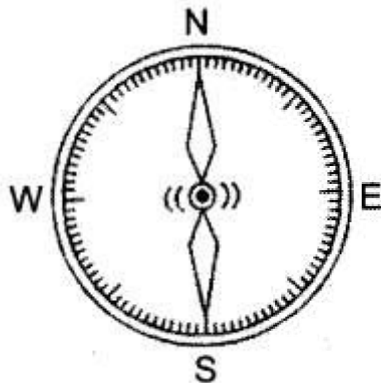
Horse-shoe Magnet



2. Answer:

Magnetic Substance	Non-magnetic substance
Iron, steel, nickel	Plastic, wood, copper, stainless steel spoon

3. Answer:



4. Answer:

- (i) Magnet has two poles—south pole and north pole.
- (ii) Poles of magnet cannot be isolated.
- (iii) Like poles repel each other and unlike poles attract each other.
- (iv) Freely suspended magnet aligns in N-S direction.

5. Answer:

- (1) By hammering the magnet strongly.
- (2) By heating a magnet strongly and keeping it in the east-west direction.

6. Answer: Television, mobiles, CD, computers and many more devices are made up of magnetic materials and magnets in it. If you bring a magnet closer to it then it will spoil these devices.

7. Answer: With the help of a magnet we can attract all iron nails and screws and can separate them from the wooden shavings. As iron nails and screws are magnetic materials and will get attracted to the magnet, whereas wooden shavings are non-magnetic.
8. Answer: To identify the magnet, repulsion (like poles of two magnets repel) is the only test which will let you know whether the given rod is an iron rod or a bar magnet. Because a magnet attracts an iron object and unlike poles of magnets also attract each other.

Long Answer:

1. Answer. We know that pole is the point where the strength of the magnet is maximum. So more and more iron particles will be attracted at poles of a magnet when we bring a magnet near the iron particles. We will observe the crowdness of particles at the ends of magnet. This indicates the presence of two poles in a magnet. Hence poles are present in a magnet in pair. If a magnet is divided into two parts, each part also possesses a pair of poles.



Crowdness of iron Particles around poles

2. Answer: Take a bar magnet and place its pole near one edge of the iron bar. Without lifting the bar magnet, move it along the length of iron bar. Move the magnet again along the iron bar. Repeat it 30-40 times. Check whether it has become a magnet. If not continue the process for some more time.
3. Answer: It is said that magnet was discovered in Greece. A shepherd name Magnes used to take a stick with him to control his heard. One day he was surprised to see that he had to pull hard to free his stick from a rock on the mountainside. The rock was natural magnet and it attracted iron tip of shepherd's stick.
2. Answer: Materials that allow electric current to pass through them are called conductors. For example: iron, copper etc. Metals are good conductors. Materials that do not allow electric current to pass through them are called insulators. For example-rubber, plastic etc.