

Class: VI
Subject: Physics
Topic: Fun with magnets
No. of Questions: 25

Q1. What happens when the north pole of a magnet is placed near the north pole of another magnet?

Soln: Like poles repel each other while unlike poles attract each other. Hence, both the magnets will repel each other in this case.

Q2. 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

Soln: Magnetic materials like iron or cobalt might have been used to make some part of the sharpener.

Q3. What is magnet?

Soln: A material which shows attraction for iron, cobalt and nickel is called magnet. When suspended freely, points in geographical north-south direction.

Q4. Which magnet is used in electric bell?

Soln: In an electric bell, U- shaped electro-magnet is used.

Q5. What is a natural magnet?

Soln: Natural Magnet: Naturally occurring substances having the characteristic properties as (i) Attract the iron and some of its ores (ii) After suspending freely, its ends always stay in north & south direction respectively. For example: Loadstone, Iron, Nickel, Cobalt etc.

Q6. Is it possible for a magnet to have only one pole?

Soln: No, the magnet always consist of poles in pair (two poles) i.e. a North pole and a South pole.

Q7. In which direction a freely suspended magnet aligns itself?

Soln: A freely suspended magnet always aligns itself in the geographical north-south direction

Q8. Name two magnetic and two non magnetic materials.

Soln: The two magnetic materials are:-1. Iron. 2. Cobalt. The two non-magnetic materials are:- 1. Leather, 2. Plastic.

Q9. What is a temporary magnet? What material is used for this purpose?

Soln: If a magnet loses its property within a very short period of time then it is called as temporary magnet. They are usually made up of soft iron.

Q10. Give the properties of magnet?

Soln: The important properties of a magnet are given as follows: 1. They have directive property i.e. when suspended freely, a magnet always aligns itself in north-south direction. 2. They have attractive property i.e. a magnet attracts magnetic materials like iron.

Q11. Define attractive and directive property of a magnet

Soln: 1) Attractive property: - A magnet has the property to attract some substances like iron, cobalt and nickel when brought near it. This property of magnet is called as attractive property. 2) Directive property: - If we suspend a magnet freely in air then it always aligns itself in the geographic north-south direction. This is called as directive property of a magnet.

Q12. Why the earth behaves as a huge magnet?

Soln: Certain complex phenomenon inside the earth produce a magnetic effect, which makes the earth behave like a huge bar magnet, with poles at its ends. The north pole of this imaginary magnet points approximately towards geographical South Pole and its South Pole points approximately towards geographical North Pole. That is why, North pole of a freely suspended magnet points north.

Q13. 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?

Soln: Nails and screws are made up of iron which are magnetic materials whereas wooden shavings are non-magnetic materials. So we can separate them from the scrap by the help of magnet. Since wooden shavings would not be attracted by magnet, while the nails and screws will get stuck to the magnet.

Q14. Where are the poles of bar magnet located? Suggest a method to locate them.

Soln: The poles of the bar magnet are located at its two end points. Place a magnet on paper and sprinkle some iron fillings on it. It observed that most of the iron fillings get attracted towards the ends compared to the central portion indicating that the poles are located towards the end of the magnet.

Q15. How is a compass used to find directions?

Soln: When the magnet is suspended freely in air then it aligns itself in the geographic north-south direction. We use this property of magnet in compass, which is used to give us direction at a particular place. The central part of the compass is a magnetized needle which is placed above a nail. Since the needle is magnetic in nature and can move freely in all direction, due to property of the magnet it aligns itself in the north south direction, showing us the north-south direction. The north pole of the compass is generally painted red so that we may distinguish between North pole and South pole.

Q16. Who discover magnet?

Soln: A Greek shepherd named Magnes discovered magnets 4,000 years ago in Magnesia, Greece. The name magnetite has been derived from Magnesia or Magnes.

Q17. What is magnet?

Soln: Any material that attract iron object is called magnet. The two ends of a magnet are called its poles. The poles of a magnet are named as the North Pole and the South Pole. In order to identify the poles, the North Pole is usually painted in red colour. All magnets have two poles, and they are called dipoles. Law of magnets: Unlike poles attract each other and like poles repel each other.

Q18. Why magnet called load stone?

Soln: Magnet in the form of a bar was used to find directions on the earth, and so it is called as a Lodestone.

Q19. What are magnetic material and Non-Magnetic Materials?

Soln: Materials that are attracted by a magnet are called magnetic materials. Objects made of materials such as iron, cobalt and nickel are magnetic objects. Examples of magnetic materials include iron nail, key, metal spade, needle and metal door handle.
Materials that are not attracted by magnets are called non-magnetic materials. Examples of non-magnetic materials include rubber, coins, feather and leather.

Q20. What are different types of magnets?

Soln: Bar magnets : In these magnets, the poles are located at the ends of the bar.
Cylindrical magnets: In these magnets, the poles are located at the two circular ends of the cylinder.
Horseshoe magnets : In these magnets, the poles are located at the two free ends of the 'U' shape.

Q21. What is Compass?

Soln: A compass is an instrument that is used to find the directions. It has a thin magnetic needle supported from a pivot so that it can rotate freely. The needle is placed over a dial with the directions marked. The entire assembly is placed inside an airtight box.

Q22. How can you make artificial magnets?

Soln: A rectangular iron bar, an iron needle, a blade or an iron nail can be turned into a magnet by rubbing a bar magnet over like combing hair to make artificial magnets.

Q23. How do you protect magnets from losing their magnetic properties?

Soln: Precautions to protect magnets from losing their magnetic properties are:
(a) Never drop magnets from heights. (b) Never heat a magnet. (c) Do not hammer a magnet.

Q24. Write some use of magnet?

Soln: debit cards, credit cards or ATM cards, audio and video cassettes etc

Q25. What are magnetic keepers?

Soln: A soft iron pieces placed across the ends of a pairs of bar magnets to preserve the magnetism for a long time is called magnetic keepers.