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Q1.

Prop of magnetic field lines:

- (i) The magnetic field lines originate from the north pole of a magnet and end at its south pole.
- (ii) The strength of magnetic field is indicated by the degree of closeness of the field lines. Where the field lines are closest together, the magnetic field is the strongest there.

Q2

- (i) By using iron filings
- (ii) By using compass

Q3

Magnetic field is the strongest at the place where the magnetic field lines are closest together.

Q4

False

The axis of earth's imaginary magnet is inclined at an angle of 15° with the geographical axis.

Q5

A compass needle gets deflected when brought near a bar magnet because the bar magnet exerts a magnetic force on the compass needle, which is itself a tiny pivoted magnet.

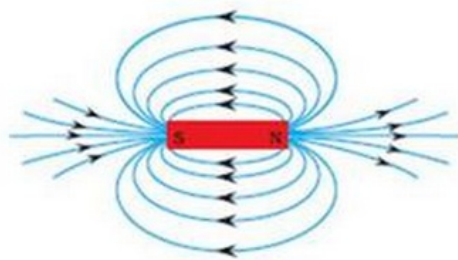
Q6

Manufacturers use a magnetic strip in the refrigerator's door to keep it closed properly.

Q7

- (a) north; south.
- (b) bar; south.

Q8.



Magnetic field lines around a bar magnet.

Q9

The space surrounding a magnet in which magnetic force is exerted, is called a magnetic field. The direction of magnetic field lines at a place can be determined by using a compass needle. A compass needle placed near a magnet gets deflected due to the magnetic force exerted by the magnet. The north end of the needle of the compass indicates the direction of magnetic field at the point where it is placed.

Q10

Two magnetic field lines do not intersect each other due to the fact that the resultant force on a north pole at any point can be only in one direction. But if the two magnetic lines get intersect one another, this means that resultant force on a north pole placed at the point of intersection will be along two directions, which is not

possible.

Q11

Because the strength of magnetic field produced by the cable is quite weak.

Q12

(a) The magnetic field lines are the lines drawn in a magnetic field along which a north magnetic pole would move. The magnetic field lines are also known as magnetic lines of forces.

Activity to draw a magnetic field line outside a bar magnet from one pole to another pole:

1. Take a small compass and a bar magnet.
2. Place the magnet on a sheet of white paper fixed on a drawing board, using some adhesive material.
3. Mark the boundary of the magnet.
4. Place the compass near the north pole of the magnet. The south pole of the needle points towards the north pole of the magnet. The north pole of the compass is directed away from the north pole of the magnet.
5. Mark the position of two ends of the needle.
6. Now move the needle to a new position such that its south pole occupies the position previously occupied by its north pole.
7. In this way, proceed step by step till you reach the south pole of the magnet .
8. Join the points marked on the paper by a smooth curve. This curve represents a magnetic field line.

(b) A freely suspended magnet points in the north-south direction because earth behaves as a magnet with its south pole in the geographical north and the north pole in the geographical south.

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