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Magnetism

EXERCISE - 10A

Q2. What is natural magnet ? 2 limitations.

→ The pieces of lodestone found in nature are called natural magnets. Limitations of a natural magnet -

1. They are irregular and odd-shaped
2. They are not magnetically very strong

Q4 How will you test whether the given rod is of iron or copper?

→ Iron rod gets magnetised when placed near a bar magnet by magnetic induction, while copper does not get magnitised.

Q8. The temporary magnetism acquired by a magnetic material when it is kept near (or in contact with) a magnet, called induced magnetism.

Q11. a) When two pins are hung by their heads from the same pole of a magnet their pointed ends move apart.

→ When two pins are hung by their heads from the same pole of a magnet, the acquire the same

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polarity Because like poles repel each other, their pointed ends move apart.

b) Several soft iron pins can cling one below the other from the pole of a magnet because the magnet induces magnetism in an iron nail. This magnetized nail magnitizes the pins which attracts the ones under it. This process continues till its force is sufficient to balance the total weight.

c) The north end of a freely suspended magnetic needle gets attracted towards a piece of soft iron as the needle induces magnetism in the soft iron. Thus, the soft iron behaves like a ~~need~~ magnet and attracts the needle

14. 'Induction precedes attraction' as when a piece of iron is bought near one end of a magnet, the nearer end of the piece ~~of~~ acquires an opposite polarity by magnetic induction.

↓ Opposite polarity — unlike poles attract — attracted ~~pe~~ towards end of magnet —.

A piece first becomes a magnet by induction then is attracted.

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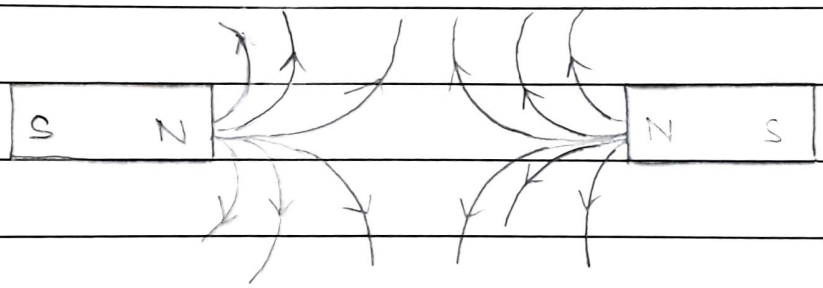
18. Properties of magnetic field lines -

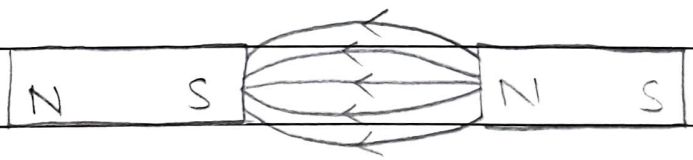
1) Closed and continuous curves
2) Directed from north pole to south pole
3) The tangent at any point on it gives the magnetic field line.
4) They never intersect each other.

19. Two magnetic field lines can never intersect each each as if they intersect, there would be two different directions of the magnetic field which is not possible.

20. a)



b)



26. Neutral points are the points at which two magnetic fields are equal in magnitude, but opposite in direction and its net magnetic field is zero.

A compass needle if placed at a neutral point will rest in any direction.