Chapter 8. Electricity and Magnetism: Magnestism

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Solution 1:
Natural magnet is the deposits of the iron ore which has the attracting property of iron The properties of natural magnet are :

- The magnet has the directive property, when it is suspended freely , it always come in north-south direction.
- A magnet attracts magnetic substances like iron, steel etc. so, it has the attractive poperty.
- Like poles repels each other while unlike poles attract each other in magnet.

Solution 2:
Artificial magnets are the magnets which are formed by bringing the natural magnet near it The artificial magnets have the high retentivity means they remains magnetized for the long period of time and that is why they are used for making strong electromagnets.

Solution 3:
The magnetic forces appear to be concentrated at the near ends of the magnet. These points are called the magnetic poles.

Solution 4:
Bring the rod near the magnet, iron rod will get attract towards the magnet while copper will not.

Solution 5:
Suspend a magnet freely; it will always point towards the north -south direction. The pole of the magnet which point towards the north is called north pole and the pole which point towards south is called south pole.

Solution 6:
Magnetic axis: The imaginary line joining the poles of the magnet is called magnetic axis.
Poles of the Magnet: The points of the magnet where the attraction appears to be maximum are called poles of the magnet.
Effective Length of the magnet: The distance between the poles of magnet is the effective length of magnet.

Solution 7:
Suspend the iron bar and magnet freely in the space by using thread. And, move them here and there few number of times. The bar which always points in north south direction after coming to rest is a magnet and other bar is the iron bar.

Solution 8:
No, we cannot isolate the poles of the magnet.

Solution 9:
The magnetism acquired by the magnetic material when it is kept near the magnet is called induced magnetism.

Solution 10:
The lines of the magnetic field are the continuous curve such that the tangent drawn at any point gives the direction of magnetic field at that point.

Solution 11:
The natural magnet which was used for the navigation by the mariners is called lodestone.

Solution 12:
Magnetic compass is used to draw the magnetic field of lines around the magnet.

Solution 13:
No, Magnetic field of lines cannot intersect each other.

Solution 14:

Nature of Bar	North Pole	South Pole
Glass	No action	No action
Iron ore	attraction	attraction
North pole of magnet	repulsion	attraction
South pole of magnet	attraction	repulsion

Solution 15:
The simple experiment to show that like poles repel while unlike poles attract each other is : Suspend a bar magnet and allow it to freely rotate. When it will come to rest, it will point towards the north south direction. Now, bring the N pole of second magnet near the North pole of the suspended magnet , we will see repulsion between the two magnets. But, if we bring south pole of second magnet near the north pole of suspended magnet then we will observe attraction. So, we can say like poles repel while unlike poles attract.

Solution 16:
The directions indicated by the needle of compass will help to draw the magnetic lines of force.

Solution 17:
Neutral points are the points where the magnetic field of magnet has the magnitude equal to the magnitude of earth’s magnetic field but in opposite direction.

Solution 18:
Neutral points help in finding the magnitude and direction of earth’s magnetic field at that particular point.

Solution 19:
The resultant magnetic field at neutral point is zero.