

6.MAGNETISM

1. State Gauss's Law for magnetism.
2. Do the B field lines due to an ordinary bar magnet form closed curves?
3. A bar magnet is broken in half. Each half is broken in half again etc. The observation is that each piece has both a north and south pole. How can this be explained?
4. An electron travelling with speed around a circle of radius r is equivalent to a current of _____?
5. How do electron dipole moments behave in a paramagnetic substance when a magnetic field is applied?
6. Of the three kinds of magnetic materials, which are used to make permanent magnets?
7. A magnetic field B_0 is applied to a diamagnetic substance. How is the field in the interior of the substance?
8. A positively charged ion, due to a cosmic ray, is headed through Earth's atmosphere toward the centre of Earth. In which direction will the ion be deflected due to Earth's magnetic field?
9. Define declination, dip and horizontal component in earth's magnetic field.
10. Distinguish between diamagnetic, paramagnetic and ferromagnetic materials. Give examples of each.
11. In the picture of the earth being described as a huge magnet, how are magnetic poles placed relative to the geographic poles.
12. Is it possible to isolate a magnetic monopole? Why?
13. Draw the magnetic lines of force around a bar magnet.
14. What is the potential energy of a magnetic dipole, m placed in a magnetic field, B .
15. Define magnetic flux.