FUN WITH MAGNETS

C.1. Freely suspended magnet points in the

north-south direction. This is because the earth itself behaves like a huge bar magnet with its magnetic poles near the geographical North and South Poles. In a freely suspended magnet,

the North Pole points towards the geographical North Pole since it is attracted by the earth's magnetic South Pole. Similarly, the South Pole of the suspended magnet is attracted by the earth's magnetic North Pole and, therefore, points towards the geographical South Pole.

- 2. We will get two separate magnets each with its north and south poles.
- 3. No, because copper is a non-magnetic substance.
- 4. Unlike poles attract and like poles repel each other.
- 5. Because a magnet loses its magnetism, if it falls from a height.
- 6. Magnetic keepers are used to store magnets in order to avoid selfdemagnetization.

D.1. Put some iron filings on a sheet of paper. Roll a bar magnet in the filings and then lift it up. We will find that most of the iron filings stick to the magnet at the ends. There are fewer iron filings in between and almost none at the centre. Thus, in a bar magnet the regions of strongest magnetism are near the ends called the poles of a magnet.

2.



 Bring one pole of a magnet close to the ends of the magnetic material, one end at a time. If one end is attracted and the other repelled, the magnetic material is a magnet. If both ends are attracted, the magnetic material is not a magnet.

4. Place an iron nail or a bar on a table. Hold it down firmly and stroke it about 30 times, from one end to the other with one pole of a bar magnet. After you reach the other end, lift the magnet high and bring it back to the first end. We will find if we stroke with the north pole of the magnet, the end of the iron bar from which the stroking is started (end 1) becomes the north pole. The other end (end 2) becomes the south pole. If we stroke with the south pole, poles in the iron needle will be reversed.



- 5. Magnetic compass: A compass consists of a magnetized needle pivoted at a point so that it is free to rotate about that point. The needle points in the north-south direction provided it is kept away from another magnet or other magnetic materials.
- 6. Three uses of magnets are:
 - (i) In refrigerator door stickers.
 - (ii) In electric motors used in fans and other electrical appliances.
 - (iii) In speakers, microphones, picture tubes of televisions and computer monitors.