

## THURST AND PRESSURE (IX)

1. Iron nail sinks in water but floats in mercury. Why?
2. How does a boat float?
3. Why is the pressure on ground more when a man is walking than when he is standing?
4. Define thrust. What is its unit?
5. Explain why big boulders can be moved easily by flood.
6. What do you understand by pressure? Discuss factors on which pressure depends.
7. A pressure of 10 Pa acts on an area of  $3.0 \text{ m}^2$ . What is the force acting on the area? What force will be exerted by the application of same pressure if the area is made one-third?
8. If a fresh egg is put into a beaker filled with water, it sinks. On dissolving a lot of salt in the water, the egg begins to rise and then float. Why?
9. A piece of steel has a volume of  $12 \text{ cm}^3$ , and a mass of 96g. What is its density?
  - a) In  $\text{g/cm}^3$ ?
  - b) In  $\text{kg/m}^3$ ?
10. A girl is wearing a pair of flat shoes. She weighs 550N. The area of contact of one shoe with the ground is  $160 \text{ cm}^2$ . What pressure will be exerted by the on the ground:
  - (a) if she stands on the foot.
  - (b) if she stands on both the feet
11. Define buoyant force.
  - (a) Name two factors on which buoyant force depends.
  - (b) What is the cause of buoyant force?
  - (c) When a boat is partially immersed in water, it displaces 600kg of water. How much is the buoyant force acting upon the boat in newtons? ( $g=10 \text{ ms}^{-2}$ )
12. Define density.
  - (a) What is the SI unit of density?
  - (b) Define relative density. What is the SI unit of relative density?