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Solution: 66

(a) The red brown gas will diffuse from jar A into colorless gas in jar B due to which its red brown colour will also spread into jar B.

(b) Diffusion (in gases).

(c) Bromine vapour.

(d) Air.

(e) Potassium permanganate and water.

Solution: 67

Bromine diffuses slowly into air because the motion of bromine molecules is obstructed due to the collisions with the moving molecules of air. Bromine diffuses very rapidly into vacuum because there is 'nothing' in the vacuum to oppose the motion of bromine molecules.

Solution: 68

Chlorine will diffuse faster than bromine vapour. This is because light gases diffuse faster than heavy gases.

Solution: 69

The molecules in a liquid (the brake oil) can move freely without being compressed much and hence transmit the pressure applied on brake pedal to the brake drum (on moving wheel) efficiently.

Solution: 70

The steam is gaseous form of water. The molecules of water in steam move very rapidly in all directions and fill the whole kitchen space with steam. Gases (including steam) fill their container completely.

Solution: 71

In both diffusion as well as osmosis, there is movement of particles from a region of higher concentration to a region of lower concentration. Diffusion can take place without there being a membrane or through a permeable membrane. But, Osmosis can take place through a semi-permeable membrane.

(a) Osmosis

(b) Diffusion

(c) Osmosis

(d) Osmosis

(e) Osmosis

(f) Diffusion

(g) Diffusion

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Solution: 72

No, the student's conclusion is wrong. The air from the upper jar also diffuses down into the lower gas jar containing bromine vapour. But since the air is colourless it cannot be noticed by the student.

Solution: 73

The fast moving molecules of air trapped in the inflated balloon exert continuous pressure on the thin, stretched rubber sheet of balloon and keep on diffusing out gradually through it.

Solution: 74

(a) Pollen Grains.

(b) Water.

(c) Brownian motion.

(d) The fast moving water molecules are constantly hitting particles

X causing them to move in a zig-zag path.

(e) Robert Brown.

(f) The liquid Y is made up of extremely small particles which are constantly moving.

Solution: 75

(a) Dust particles.

(b) Air.

(c) Brownian motion.

(d) The fast moving air molecules are constantly hitting the tiny dust particles causing them to move rapidly in a very haphazard manner.

(e) The gaseous matter 'air' is made up of very tiny particles which are constantly moving.

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