

Question 9

This question is about density and the transfer of internal energy.

Fig. 3.1 is a graph showing how the volume of a fixed mass of water varies as the temperature increases from -2°C to 10°C .

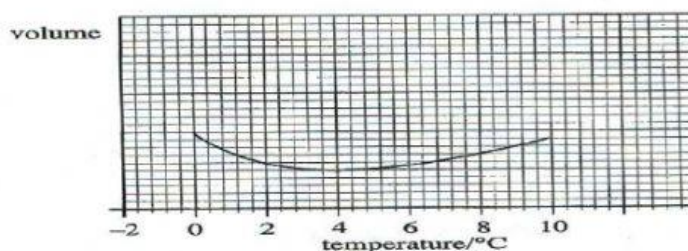


Fig. 3.1

- (a) Describe how the volume of the water varies

(i) at 0°C ,

(ii) between 0°C and 4°C ,

(iii) between 4°C and 10°C .

_____ [3]

- (b) Use the terms maximum and minimum to describe the volume and density of water at 4°C .

(i) volume _____

(ii) density _____ [2]

- (c) State the term used to describe this property of water.

_____ [1]

- (d) Fig. 3.2 shows a section through a small pond.

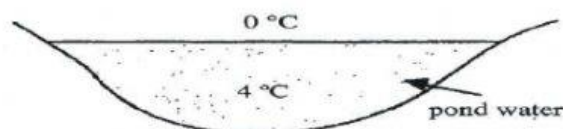


Fig. 3.2

- (i) Name the main method of internal energy transfer which will take place from the water at the bottom of the pond to the water at the surface.

_____ [1]

- (ii) Describe and explain what happens when the temperature of the water at the bottom of the pond drops to 4°C .

_____ [3]

Total marks [10]