

- 12** An air bubble of volume 20 cm^3 is at the bottom of a lake 40 m deep where the temperature is 4.0°C .

The bubble rises to the surface which is at a temperature of 20°C .

Take the temperature of the bubble's air to be the same as that of the surrounding water.

Take the atmospheric pressure to be $1.0 \times 10^5 \text{ Pa}$ and density of water to be 1.2 g cm^{-3} .

What is the volume of the bubble as it reaches the surface?

- A** 3.7 cm^3
- B** 100 cm^3
- C** 120 cm^3
- D** 570 cm^3