

**10** The photograph shows a cylinder of compressed air used to breathe underwater.



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(a) Explain how the air causes a pressure on the inside of the cylinder.

Refer to particles in your answer.

(3)

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(b) Explain what happens to the pressure of the air inside the cylinder as its temperature increases.

(3)

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- (c) A fixed mass of air has a volume of  $43\,000\text{ cm}^3$  when its pressure is  $100\text{ kPa}$ .

Calculate the pressure of this fixed mass of air when it is inside the cylinder.

[volume of air in cylinder =  $8500\text{ cm}^3$ ]

(3)

pressure = ..... kPa

**(Total for Question 10 = 9 marks)**

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