3 **(a)** Define *pressure*.

....

.... [1]
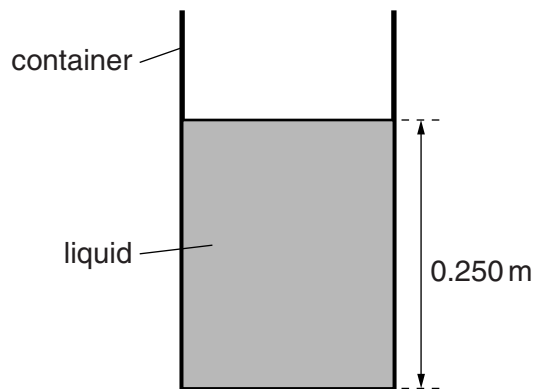
(b) Explain, in terms of the air molecules, why the pressure at the top of a mountain is less than at sea level.

....

....

....

....

.... [3]

(c) Fig. 3.1 shows a liquid in a cylindrical container.

Fig. 3.1

The cross-sectional area of the container is $0.450\,m^2$. The height of the column of liquid is $0.250\,m$ and the density of the liquid is $13\,600\,kg\,m^{-3}$.

(i) Calculate the weight of the column of liquid.

weight = ... N [3]

(ii) Calculate the pressure on the base of the container caused by the weight of the liquid.

pressure = ... Pa [1]

(iii) Explain why the pressure exerted on the base of the container is different from the value calculated in **(ii)**.

....

.... [1]