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.

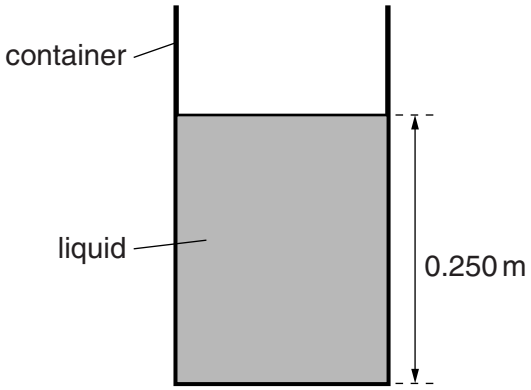

Fig. 3.1

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]