2 **(a) (i)** State one **similarity** between the processes of evaporation and boiling.

....

.... [1]

(ii) State two **differences** between the processes of evaporation and boiling.

1. ....

....

2. ....

....
[4]

(b) Titanium metal has a density of $4.5\,\text{g}\,\text{cm}^{-3}$.

A cube of titanium of mass 48 g contains 6.0×10^{23} atoms.

(i) Calculate the volume of the cube.

volume = ... cm^3 [1]

(ii) Estimate

    1.   the volume occupied by each atom in the cube,

                                    volume = ... cm^3 [1]

    2.   the separation of the atoms in the cube.

                                separation = ... cm [1]