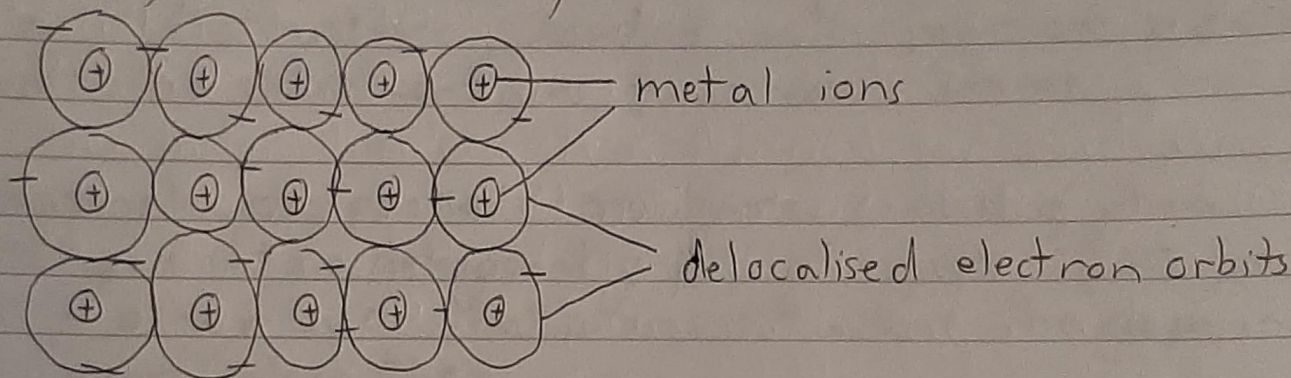


Cardboard, both printed and bare, is very cheap to produce. However, the energy cost and carbon footprint of its production are both very high relative to plastic, and it is not watertight, mandating a composite packaging with an inner plastic sheet in order to fulfil the requirements.

2. a) In metals, the electrons leave the outer layer of the metal atoms, forming positive metal ions and a sea of delocalised electrons. In a solid metal, these ions form a closely packed and regular metallic lattice:



These delocalised electrons are called valent electrons. Some metals lose one electron from their outer shell and some metals lose two; this is called the valency value of the metal. Metals with a valency of 2 have stronger bonds than valency 1 metals, because the ions and sea are more strongly charged and so attract each other more: this results in a stronger metal.

