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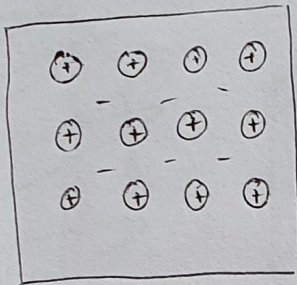
MATERIALS AND INTRODUCTION
TO PROCESSING

ACMA4000

22/01/2021

Q) 2.

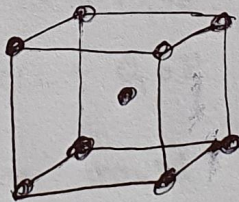
a)



Metallic bonding: primary interatomic bonding; sea of electrons. Valence electrons are not bound to any particular atom in the solid. These free electrons hold the ion cores together.

More electrons on outshell increase the electrostatic power.

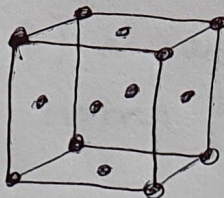
b) BCC - body centered cubic structure.



BCC unit cell has atoms at each of 8 corners of a cube plus one atom in the centre

The corner atoms are corners of another ~~so~~ cubes so they are shared among 8 unit cells.
~~Coordination~~ Coordination no 8.

FCC - Face centered cubic structure



Each corner atom is shared among 8 unit cells, a face centered atom belongs to only 2. One-eighth of each of the eight corner atoms and one-half of each of the 6 face atoms, or total of 4 atoms. Coordination no 12.