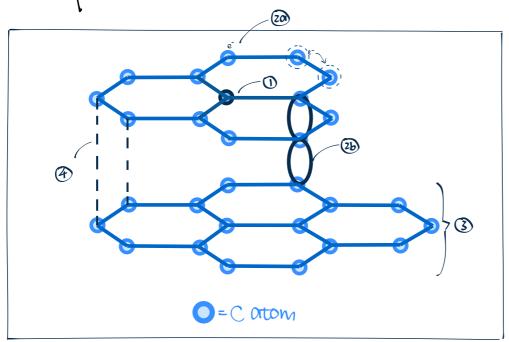
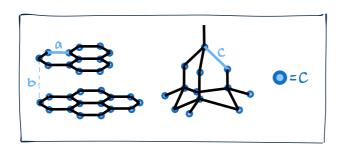
Graphite

1 Properties



- 1 Covalent bonds
 - Each C atom shares 3 bonding e w/ neighbouring atoms
- 2 The unbonded electron
 - a. The unbonded outermost shell et is delocalised. It can move across & between layers. -> electrical conductivity
 - b. '8' shaped orbital allows it to more between layers
 - C. It can sometimes form (ovalent bonds / atoms -> partial double bond
- 3 Graphene
 - Graphene = 1 single layer of graphite
- 4 UDW forces
 - Weak VDW forces exist 1. 2 layers -> allow graphene layers to slide over each other.
 - Graphite is used as pencil / lubricant.

2 Example question



Compare distances a,b,c.

force

Fa & Fc, Fb:

- a, c: covalent bond
- b: VDW force
- break VDW require to energy than bond
- Faic > Fb

Fa, Fc:

- a: C-C partial double bond
- C: C-C single bond
- -> bond strength of partial double > single
- $-F_A > F_c$

Distance & force

:. a < c < b