

Exercise VI

1) What is the geometry of the central atom in: $(\text{CO}_3)^{2-}$, $(\text{SiH}_3)^-$, CS_2 , $(\text{CMe}_3)^+$?

trigonal planar, pyramidal, linear, and trigonal planar

2) Name an acid-base reaction which produces CO_2 , and name a redox reaction which produces CO_2 ?

carbonate plus acid, and any oxidation of an organic material

3) What is not referring to a carbon allotrope?

Graphene
Graphale
Graphite
Graphyne
Fullerane
Fullerene
Buckyball
Diamond

Graphale and Fullerane

4) How can you synthesize carbon monoxide in the laboratory (equation)?

Formic acid and sulfuric acid

5) In the structure of K_xC_{60} , all interstitial sites (octahedral and tetrahedral) are occupied by potassium ions. Given that the C_{60} anions crystallize with an fcc arrangement, what is the value of x in K_xC_{60} ?

K_3C_{60}