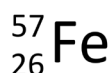
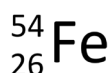


Name:

Class:



The symbols for two isotopes of iron are shown below.



i. How do these two isotopes differ in their atomic structure?

Different number of neutrons / different mass number.

ii. Determine the number of neutrons present in one atom of the isotope ${}^{57}_{26}\text{Fe}$

31

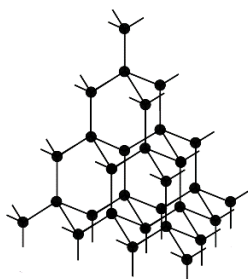
iii. Determine the number of electrons in one Fe^{3+} ion.

23

Complete the word equation for the reaction of bromine with aqueous potassium iodide.

bromine + potassium iodide $\rightarrow$ **potassium bromide + iodine**

Describe the structure of diamond.

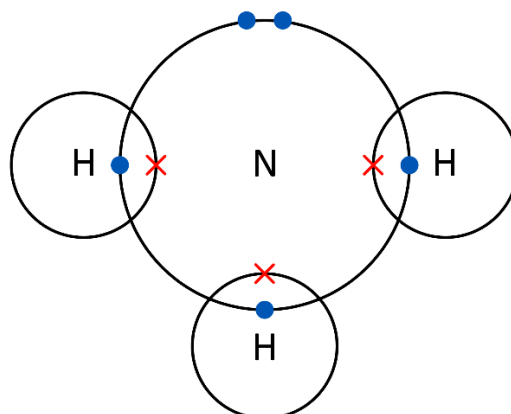


Diamond is a giant covalent structure / macromolecule.

Each carbon atom is covalently bonded to four other carbon atoms

Complete the dot and cross diagram for the ammonia molecule shown below.

Show only the electrons in the outer shell of each atom.



Hydrogen-oxygen fuel cells, rather than chemical cells, can be used to power some vehicles.

i. Give **one** advantage of using a hydrogen-oxygen fuel cell, rather than using a chemical cell, to power a vehicle.

The voltage is constant OR chemical cells contain harmful/toxic substances.

ii. Complete the half-equation for the reaction taking place at one of the electrodes in a hydrogen-oxygen fuel cell.

