

Year 12 Chemistry
Quick Quiz: Elemental Chemistry

1.
 - (a)
 - (i) 3
 - (ii) p
 - (iii) $1s^2 2s^2 2p^1$
 - (b)
 - (i) 4
 - (ii) d
 - (iii) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^1 3d^5$
2.
 - (a) alkaline earth metals
 - (b) halogens
3.
 - (a) 3+
 - (b) 2+, 4+
 - (c) 1-
4.
 - (a) 3
 - (b) 1,3,5,7
5.
 - (a) low
 $\text{CaO} + \text{H}_2\text{O} \rightarrow \text{Ca}^{2+} + 2\text{OH}^-$
 - (b) high
 $2\text{NO}_2 + \text{H}_2\text{O} \rightarrow \text{HNO}_2 + \text{HNO}_3$
 - (c) high
 SiO_2 doesn't react with water
6. The electronegativity difference between N and H means the bonds will be polar. The unbonded electron pair causes the molecule to be a trigonal pyramidal shape, meaning the bond dipoles share a common direction, making the molecule polar.