

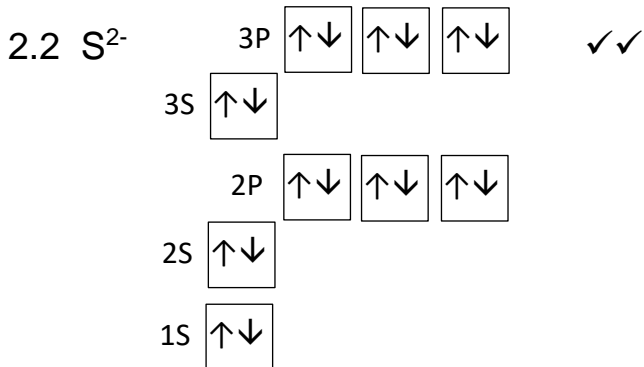
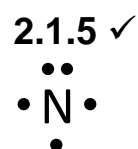
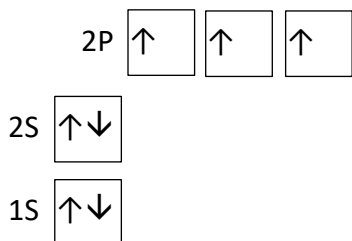
10 Science April 2021 MEMO

1.1 C 1.2 B 1.3 A 1.4 D 1.5 A

2.1.1 nitrogen ✓

2.1.2 $p^+ = 7$ ✓ $n^0 = 7$ ✓ $e^- = 7$ ✓

2.1.3 orbitals ✓ arrows ✓ 2.1.4 $1s^2 2s^2 2p^3$ ✓✓



[11]

3.1 Isotope: Same element different number of neutrons (mass) ✓✓

3.2 Rel Atomic Mass = $\frac{60}{100} \times 64 + \frac{40}{100} \times 67 = 65.2$ ✓✓✓

3.3 Zn, zinc ✓

[6]

4.1 O_2 , oxygen ✓

4.2 Si, silicon ✓

4.3 F, flourine ✓

4.4 Ar, Argon ✓

4.5 Co, Cobalt ✓

[5]

5.1 Ionization Energy is the energy needed to remove an electron(s) from an atom whilst Electron Affinity is the energy released when an atom gains an electron(s)

5.2.1 As the atomic radius decreases (left to right) so the IE increases since the electron's are closer to the nucleus \therefore stronger forces of attraction requires more energy to

break OR

as the electron affinity increases (Left to right on Periodic table)) so the I.E. also increases. An atom with a higher electron affinity is more reluctant / less likely to release an electron

[6]

6.1.1 loses electrons

$$6.1.2 \quad n = \frac{Q}{q_e} = \frac{3.5 \times 10^{-6}}{1.6 \times 10^{-19}} = 2.19 \times 10^{13} \text{ electrons lost} \quad (\text{formula subst ans})$$

6.2.1 Electrons transferred from A \rightarrow B

$$6.2.2 \text{ Final charge on both is: } Q = \frac{-4 + 6}{2} = \frac{2}{2} = +1 \text{ mC on both}$$

6.3.1 positive

6.3.2 Electrons transferred from perspex to polyester

6.3.3 Less positively charged

[12]