**Practice questions Periodic Trends**

1. What increases in equal steps of one from left to right in the periodic table for the elements lithium to neon?
2. Which properties decrease down group 7 in the periodic table?
3. Which properties decrease down group 1 in the periodic table?
4. Give the number of valence electrons in the following elements
   1. Group 1
   2. Group 2
   3. Group 3A
   4. Group 4A
   5. Group 5A
   6. Group 6A
   7. Group 7A
   8. Group 8A or 0 (according to data booklet)
5. What is the trend across and down the periodic table for
   1. Atomic radius
   2. Ionization energy
   3. Electronegativity
6. What two forces are responsible for the trends listed above?
7. Give two reasons for increasing atomic radius down a group on the periodic table.
8. Give two reasons for lower ionization energy going down a group on the periodic table.
9. Give two reasons for the increase in ionization energy going across a period from left to right.
10. Give two reasons for the decrease in atomic radius going across a period from left to right.
11. Explain why the second ionization energy for magnesium is lower than that for sodium.
12. Explain why the first ionization energy for boron is slightly less than that of beryllium.
13. Explain why the first ionization energy of oxygen is slightly less than that of nitrogen.
14. Describe the change in atomic radius when anions form.
15. Describe the change in atomic radius when cations form.
16. Write reactions for lithium and water and potassium and water.
17. State weather the resulting solutions will be acidic, neutral or alkaline.
18. List some observations you could make while observing lithium react with water.
19. Reactivity with water increases/decreases going down the periodic table for group I.
20. Explain the trend in reactivity in group 1 in terms of ionization energy.
21. Suggest a reason that melting point decreases down group 1 on the periodic table.
22. Suggest a reason that melting point increases down group 7 on the periodic table.
23. Explain the trend in reactivity in group 7 in terms of electron affinity
24. Determine which of the following are likely to occur:
    1. Cl2 + I- 🡪?
    2. Cl2 + Br- 🡪 ?
    3. Br2 + I- 🡪?
    4. Br2 + Cl- 🡪 ?
    5. I2 + Cl- 🡪 ?
    6. I2 + Br- 🡪 ?
25. List the oxides formed by the period three elements.
26. Describe the trend in acid/base properties from left to right