

## Worksheet 1

### Topics : Periodicity

Q.1 In the periodic table, group is to column as period is to \_\_\_\_\_.

Q.2 How many valence electrons are in atoms of elements found in:

- a. group 1
- b. group 15
- c. group 17
- d. group 2

Q. 3 Why are elements in the periodic table arranged in order of atomic number rather than relative atomic mass?

Q.4 In which group do you see the:

- i) greatest change in electronegativity as you go down the group?
- ii) smallest change in electronegativity as you go down the group?

Q.5 Why are the elements of group 18 usually omitted from tables that give electronegativity values?

Q.6 By referring to the periodic table, arrange the following atoms in order of smallest to largest size: Ca, F, Mg, O and P.

Q.7 Which elements are gases at room temperature?

Q.8 a) Select the most reactive non-metal from the following list:  
magnesium, sulphur, chlorine, fluorine, aluminium, oxygen.

b) Explain your reasoning.

Q.9 Why is strontium more reactive with water than beryllium is?

Q.10 Determine the period and group of the elements with the following electronic configurations:

a.  $1s^2 2s^2$

b.  $1s^2 2s^2 2p^6 3s^2 3p^2$

c.  $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^1$

d.  $1s^2$ .

Q.11 Explain why the radii of atoms do not increase uniformly as the atomic number of the atom increases.

Q.12 Name some characteristics of metals.

Q.13 Across a period, the number of subatomic particles in an atom increases, but the size of an atom decreases. Why?

Q.14 Which elements are liquid at room temperature?

- Q.15 a. State the electronic configuration of nitrogen.
- b. What period and group does nitrogen belong to in the periodic table?
- c. How many valence electrons does nitrogen have?
- d. What is nitrogen's core charge?