

Quiz (Group Trend)

A part of the Periodic Table is shown below.

		Groups							
		I	II	III	IV	V	VI	VII	0
Periods	1			H					He
	2	Li	Be	B	C	N	O	F	Ne
	3	Na	Mg	Al	Si	P	S	Cl	Ar
	4	K	Ca						

- (a) Explain why lithium and sodium belong to
- the same group.
 - different periods.
- (b) State TWO similar physical properties between lithium and sodium.
- (c) State the trend in reactivity of Group II elements down the group.
- (d) Which metal in the above Periodic Table reacts most vigorously with water? Explain your answer.
- (e) Suggest ONE reaction to show that magnesium and calcium have similar chemical properties.
- (f) Which element, fluorine or chlorine, is more reactive? Explain your answer.
- (g) Explain why Group 0 elements normally have little or no reaction with other elements.

Suggested Answer

- (a) (i) Both of them have one outermost shell electron / they have the same number of outermost shell electron, so they belong to the same group.
- (ii) Lithium atom has two occupied electron shells while sodium atom has three occupied electron shells / they have different numbers of occupied electron shells, so they belong to different periods.
- (b) Both of them are soft metals. They can be cut with a knife. Both of them have low densities.
- (c) The reactivity of Group II elements increases down the group.
- (d) Potassium. Group I elements are generally more reactive than Group II elements. Moreover, the reactivity of Group I elements increases down the group.
- (e) Both of them react readily with dilute hydrochloric acid to form hydrogen.
- (f) Fluorine. This is because the reactivity of Group VII elements decreases down the group.
- (g) This is because Group 0 elements have a stable electronic structure/a duplet or an octet of electrons.