



# Chem!stry

Name: ..... ( )

Class: .....

Date: ..... / ..... / .....

## Group 18 – The Noble Gases

### Question 1:

Complete the table on the right-hand-side to illustrate the electron configurations of the first three Group 18 elements:

### Question 2:

With regard to their electron configurations, what do the Group 18 elements all have in common?

.....  
.....

### Question 3:

What prediction can you make about the *reactivity* of the Group 18 elements? Rationalise your answer:

.....  
.....

### Question 4:

Would you expect the Group 18 elements to be *diatomic*? Briefly explain your answer:

.....  
.....

### Question 5:

State a use for each one of the Group 18 elements:

He: .....

Ne: .....

Ar: .....

### Question 6 – Enrichment:

Some compounds of xenon have been successfully synthesised in the laboratory, e.g. xenon(IV) fluoride.

a) By means of a dot (•) and cross (×) diagram, suggest how xenon and fluorine could bond together in a molecule of XeF<sub>4</sub>.

b) Suggest why only compounds of xenon rather than helium have been synthesised.

c) Suggest why only XeF<sub>4</sub> and not XeCl<sub>4</sub> or XeI<sub>4</sub> have been synthesised.

Electron Configuration	
Helium – He	Atomic Number = 2
Neon – Ne	Atomic Number = 10
Argon – Ar	Atomic Number = 18