

ST.ANDREW'S HIGH SCHOOL  
FORM 5 SCIENCE  
QUIZ #1: ATOMS, ELEMENTS AND COMPOUNDS  
NAME: \_\_\_\_\_

OPTION: \_\_\_\_\_

Answer **ALL** questions

1. Draw a diagram to show the arrangement of *electrons, protons* and *neutrons* in a Magnesium atom.  ${}_{24}^{12}\text{Mg}$ .



(a) State the **number** of:

(i) **Protons:**

Skill level 1	
1	
0	
NR	

(ii) **Electrons:**

Skill level 1	
1	
0	
NR	

(iii) **Neutrons:**

Skill level 1	
1	
0	
NR	

(b) Explain with reference to the diagram, why the atom is neutral.

Skill level 1	
1	
0	
NR	

Skill level 3	
3	
2	
1	
0	
NR	

(c) **Write** down the electron configuration for Magnesium ion.

Skill level 1	
1	
0	
NR	

(d) Explain why the electron arrangements for the oxide ion and the aluminium ion are the same.

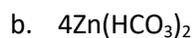
Skill level 3	
3	
2	
1	
0	
NR	

3. *Nitrogen* and *phosphorus* can both form ions with a charge of  $-3$ . Nitrogen forms the nitride ion,  $N^{3-}$  and phosphorus forms the phosphide ion,  $P^{3-}$

(i) Explain why both of these elements form ions with the same charge of  $-3$ .

Skill level 3	
3	
2	
1	
0	
NR	

2. How many atoms are there in:

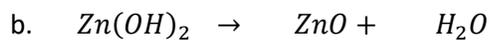


Skill level 2	
2	
1	
0	
NR	

3. Balance the following chemical equations



Skill level 2	
2	
1	
0	
NR	



Skill level 2	
2	
1	
0	
NR	