CHEMISTRY 16+

Guidance for ordinary and scholarship entrance examinations:

Firstly, look at the sample examinations provided. The questions in these samples reflect the type of question found on the entrance examinations.

Secondly, learn your Chemistry. The questions for both ordinary and scholarship entrance are based on the normal GCSE/International GCSE syllabus, a copy of the Edexcel International GCSE syllabus can be down loaded via this link:

http://www.edexcel.com/quals/igcse/int-gcse11/chemistry/Pages/default.aspx

Thirdly, don't panic if you do not know an answer straight away. You may have to apply your knowledge to a situation or chemical substance that you have never come across before.

Below are some sample questions:

1. When methane, CH_4, is heated in a plentiful supply of air it produces carbon dioxide and water.

a) Write a fully balanced chemical equation for this reaction.

.....(2)

b) What volume of oxygen would be needed to burn 10 dm^3 methane according to this equation?

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.....(1)

c) Explain why people are concerned about carbon dioxide being produced by reactions like this?

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.....(2)

d) Suggest a chemical which could be used to absorb the carbon dioxide produced in this reaction and explain your choice.

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……(3)

e) Why are methane, oxygen and carbon dioxide all gases at room temperature?

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……(2)

f) Methane consists of small covalent molecules. What do the words 'molecule' and 'covalent' mean?

Molecule:……

……(2)

Covalent:……

……(2)

2. $HCl_{(aq)}$ is a strong acid.

a) What is the name of this acid?

……(1)

b) What is the Bronsted Lowry definition of an acid?

……(1)

c) Why is it a 'strong acid'?

……(1)

The acid reacts with $NaOH_{(aq)}$ to form a salt and water.

d) Write a balanced symbol equation for the reaction between the acid and $NaOH_{(aq)}$, including state symbols.

……(3)

e) Write an ionic equation for the same reaction, again including state symbols.

……(3)

f) Describe how you would find out how much HCl(aq) is required to neutralise the NaOH (aq). You should include any pieces of apparatus you would use and practical details.

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……(5)

3. A compound contains 2.4g carbon and 0.4g hydrogen by mass.

a) Work out it's empirical (simplest) formula, showing all workings.
Relative atomic masses are: Carbon =12; Hydrogen = 1.

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……(3)

b) The RFM of the compound is 28, what is the molecular formula of the compound above?

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……(1)

4. There is a danger in coal mines that coal dust may catch fire and start an explosion. Explain why coal dust is more dangerous than lumps of coal.

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……(2)

5. When 6.4g of copper were heated in air, 7.6g of copper (II) oxide, CuO were obtained.

$$2Cu_{(s)} + O_{2(g)} \rightarrow 2CuO_{(s)}$$

a) Calculate the mass of copper (II) oxide that would be formed if the copper reacted completely. Relative atomic mass of copper = 64.

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……(3)

b) Calculate the percentage yield that was actually obtained.

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……(2)

c) What is the atom economy for the copper (II) oxide in this reaction?

……(1)

END OF QUESTIONS

Aron Needs
Head of Chemistry