Applecross Senior High School

11 Chemistry 2017

Separating Substances Lab Quiz
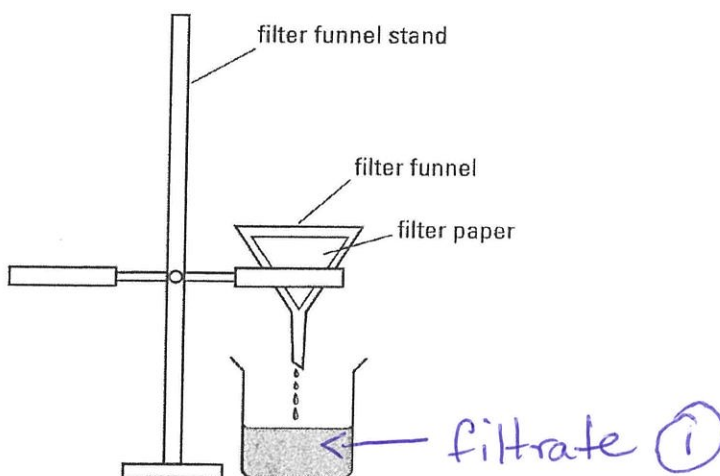## Time: 30 minutes

NAME: _Marking Key_   Mark = _____ /20 = _____ %

This Lab Quiz is based on Experiment 1, which you have completed recently. You may use your practical report to help you complete this test.

1. Part A

a) In the following diagram label the filtrate.

Fig. 1.1

filter funnel stand

filter funnel

filter paper

filtrate ①

b) Name the substances that were present in the filtrate?

NaCl and H₂O (water) ①

c) Name the substance that was left in the filter paper?

Charcoal. ①

d)   Why were you able to separate the charcoal and sodium chloride in part A of the experiment?

NaCl and charcoal have different
solubilities in water.
NaCl is soluble in water
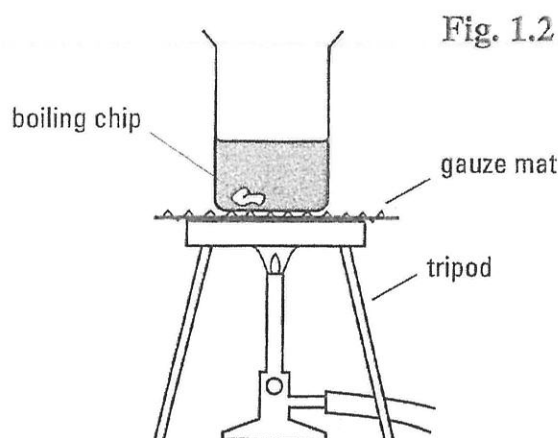Charcoal is insoluble (not soluble) in water.

②

[5 marks]

2. Part B
a) What is the function of the boiling chips in the beaker in the diagram below?

Prevents large bubbles forming in the
liquid that is being heat. Small bubbles
form around the bead/boiling chip.
Large bubbles can cause 'bumping'. ①

Fig. 1.2

boiling chip

gauze mat

tripod

b) Why did you wash the solid with ethanol in the final step of part two?

To dissolve and remove any residual
CuCl₂ from the filter paper.
The white NaCl is the only salt remaining
in the filter paper. ②

c) What colour was the filtrate in part B? _green_ ①

d) Name the substance in the filtrate _$CuCl_2$ (copper chloride)_ ①

[5 marks]

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3. Part C
    a) Name the solvent in part C. _ethanol_ ①

    b) Name the solute in part C. _$CuCl_2$ or copper chloride_ ①

    c) What is the name of the remaining undissolved solid in step 2?
       NaCl / sodium chloride ①

    d) What conclusion about the solubility of NaCl and $CuCl_2$ in ethanol, can you draw from the results of part C?
       NaCl is not soluble in ethanol and
       $CuCl_2$ is soluble in ethanol ②

[5 marks]

4. Choose the correct word or phrase from the list below and place in each cell of the following table (You will need to use some terms more than once).
    - Insoluble
    - partially soluble
    - soluble
    - not tested

	NaCl	CuCl₂	Charcoal
water	Soluble	partially soluble	insoluble.
ethanol	insoluble	Soluble	■

[5 marks]

c) What colour was the filtrate in part B? ___green___ ①

d) Name the substances in the filtrate ___CuCl₂ (copper chloride) ①___
___+ NaCl mixture (small amount)___

[5 marks]

3. Part C
   a) Name the solvent in part C. ___ethanol ①___

   b) Name the solute in part C. ___CuCl₂ or copper chloride ①___

   c) What is the name of the remaining undissolved solid in step 2?
   ___NaCl / sodium chloride ①___

   d) What conclusion about the solubility of NaCl and CuCl₂ in ethanol, can you draw from the results of part C?
   ___NaCl is not soluble in ethanol and___
   ___CuCl₂ is soluble in ethanol___
   ②

[5 marks]

4. Choose the correct word or phrase from the list below and place in each cell of the following table (You will need to use some terms more than once).
   • Insoluble ___Wikipedia___
   • partially soluble
   • soluble
   • not tested ~~359 g/L~~ 757g/L most soluble?

   + what I observed!
   we used
   CuCl₂.2H₂O !

	NaCl	CuCl₂	Charcoal
water	Soluble ✓	Partially soluble	insoluble.
ethanol	insoluble	Soluble	

   or partially soluble
   0.65 g/L
   Partially soluble
   ✓ also correct.
   ✓ just not observed.

[5 marks]