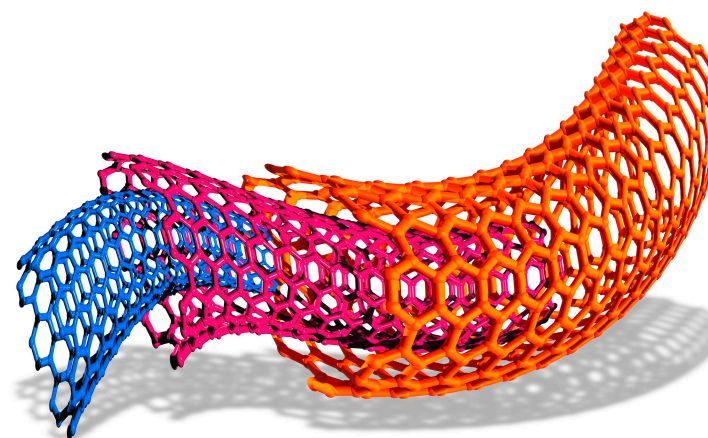


Interactive Example Candidate Responses

Paper 5 (May / June 2016), Question 3

Cambridge IGCSE™
Chemistry 0620



In order to help us develop the highest quality resources, we are undertaking a continuous programme of review; not only to measure the success of our resources but also to highlight areas for improvement and to identify new development needs.

We invite you to complete our survey by visiting the website below. Your comments on the quality and relevance of our resources are very important to us.

www.surveymonkey.co.uk/r/GL6ZNJB

Would you like to become a Cambridge International consultant and help us develop support materials?

Please follow the link below to register your interest.

www.cambridgeinternational.org/cambridge-for/teachers/teacherconsultants/

Copyright © UCLES 2017

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.

UCLES retains the copyright on all its publications. Registered Centres are permitted to copy material from this booklet for their own internal use. However, we cannot give permission to Centres to photocopy any material that is acknowledged to a third party, even for internal use within a Centre.

3 A liquid cleaner is a mixture of three substances. These substances are shown in the table.

name of substance	properties of substance
water	liquid, boiling point 100 °C
sodium carbonate	solid, soluble in water
silica	solid, insoluble in water

Plan experiments to obtain separate pure samples of each substance from the mixture in the liquid cleaner. You are provided with common laboratory apparatus.

- ~~1) Divide 1) Pour 30 cm³ of liquid~~
~~1) Measure 30 cm³ of liquid cleaner using a burette~~
~~and pour it into an evaporating dish flask with a condenser~~
~~2) Heat it till 100 °C. Condense the gas given off.~~
~~3) After condensation has occurred add anhydrous~~
~~copper (II) sulfate to measure to the liquid gas condense~~
~~(liquid). If it the solution goes blue, then the~~
~~solution is pure water.~~
~~4) Now there are 2 substance left in the liquid~~

[6]

[Total: 6]

- 1) Measure 30 cm³ of liquid cleaner using a burette.
 2) Pour it into a funnel with filter paper and collect the left over in a beaker flask
 3) The residue left in the silica,
 3) Take the residue off the filter paper, which is silica.
 4) On top of the flask attach a condenser pipe and heat the flask till 100 °C and condense the gas. Have a thermometer to measure the temperature inside the flask.
 5) Test the condensed gas (liquid) by adding anhydrous copper (II) sulfate, if the solution changes to blue then that means it is pure water.
 6) There must be crystals formed on the flask too

Continued on Pg 8

Select page

Your Mark

3

Q3 Mark scheme

- silica
 filter (the cleaner)
 wash the residue
 dry the residue
- water
 heat (the filtrate/cleaner)
 condense the vapour
- sodium carbonate
 heat to dryness/no liquid left
 (then solid) sodium carbonate is left
 OR
 heat until saturated
 then cool to crystallise/leave to crystallise

Q3) 6) There must be ^{crystals} ~~crystals~~ formed ~~on~~ in the flask ~~to~~ wait for it to cool ~~down~~ down, that is sodium carbonate pure sodium carbonate.

~~7) 7) Don~~

Your
Mark

3

Q3

Mark scheme

silica
filter (the cleaner)
wash the residue
dry the residue

water
heat (the filtrate/cleaner)
condense the vapour

sodium carbonate
heat to dryness/no liquid left
(then solid) sodium carbonate is left
OR
heat until saturated
then cool to crystallise/leave to crystallise



- 3 A liquid cleaner is a mixture of three substances. These substances are shown in the table.

name of substance	properties of substance
water	liquid, boiling point 100°C
sodium carbonate	solid, soluble in water
silica	solid, insoluble in water

Plan experiments to obtain separate pure samples of each substance from the mixture in the liquid cleaner. You are provided with common laboratory apparatus.

Step 1: Boil off the water by using a Bunsen burner and solution in a beaker. Collect the gas.

Step 2: Mix the remainder with water then filter using filter paper and a funnel. The solid will be the silica.

Step 3: again boil off the remaining liquid to obtain the sodium carbonate.

Step 4: cool down the gas collected in step 1 to obtain the water.

[6]

[Total: 6]

Select
page

Your
Mark

3

Q3 Mark scheme

silica
filter (the cleaner)
wash the residue
dry the residue

water
heat (the filtrate/cleaner)
condense the vapour

sodium carbonate
heat to dryness/no liquid left
(then solid) sodium carbonate is left
OR
heat until saturated
then cool to crystallise/leave to crystallise



- 3 A liquid cleaner is a mixture of three substances. These substances are shown in the table.

name of substance	properties of substance
water	liquid, boiling point 100 °C
sodium carbonate	solid, soluble in water
silica	solid, insoluble in water

Plan experiments to obtain separate pure samples of each substance from the mixture in the liquid cleaner. You are provided with common laboratory apparatus.

Filter the liquid cleaner to get the silica out of the mixture. Then use the distillation method to separate the water from the soluble sodium carbonate. Filtration method then simple distillation is the way to separate all of the substances.

[6]

[Total: 6]

Select
page

Your
Mark

3

Q3 Mark scheme

silica
filter (the cleaner)
wash the residue
dry the residue

water
heat (the filtrate/cleaner)
condense the vapour

sodium carbonate
heat to dryness/no liquid left
(then solid) sodium carbonate is left
OR
heat until saturated
then cool to crystallise/leave to crystallise

Cambridge Assessment International Education
The Triangle Building, Shaftesbury Road, Cambridge, CB2 8EA, United Kingdom
t: +44 1223 553554
e: info@cambridgeinternational.org www.cambridgeinternational.org

Copyright © UCLES September 2017