



Surname	Initial(s)
Signature	

Paper Reference(s)

5007 5035

Edexcel GCSE

Science (5007)

Chemistry (5035)

C1a – Topics 5 and 6

Foundation and Higher Tier

Thursday 24 June 2010 – Afternoon

Time: 20 minutes

Materials required for examination

Multiple Choice Answer Sheet
HB pencil, eraser and calculator

Items included with question papers

Nil

Instructions to Candidates

Use an HB pencil. Do not open this booklet until you are told to do so.
Mark your answers on the separate answer sheet.

Foundation tier candidates: answer questions 1 – 24.

Higher tier candidates: answer questions 17 – 40.

All candidates are to answer questions 17 – 24.

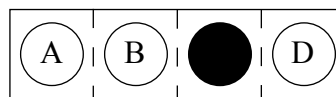
Before the test begins:

Check that the answer sheet is for the correct test and that it contains your candidate details.

How to answer the test:

For each question, choose the right answer, A, B, C or D
and mark it in HB pencil on the answer sheet.

For example, the answer C would be marked as shown.



Mark only **one** answer for each question. If you change your mind about an answer, rub out the first mark **thoroughly**, then mark your new answer.

Do any necessary calculations and rough work in this booklet. You may use a calculator if you wish.

You must not take this booklet or the answer sheet out of the examination room.

Printer's Log. No.

N37837A



W850/R1535/57570 6/5/6/2/

This publication may be reproduced only in accordance with Edexcel Limited copyright policy. ©2010 Edexcel Limited.

Turn over

edexcel 
advancing learning, changing lives

**Questions 1 to 16 must be answered by Foundation tier candidates only.
Higher tier candidates start at question 17.**

Lithium, potassium and sodium

Lithium is a metal.

Lithium reacts with cold water to produce hydrogen.

- Lithium is
 - a transition metal
 - an alkali metal
 - a halogen
 - a noble gas
- The test for hydrogen is that it
 - relights a glowing splint
 - pops when mixed with air and ignited
 - turns limewater cloudy
 - turns damp red litmus paper blue
- The symbol for an atom of lithium is
 - L
 - li
 - Li
 - LI
- Potassium is in the same group of the periodic table as lithium.
When potassium is added to cold water it is most likely to
 - sink and react slowly
 - react vigorously and give off hydrogen
 - react vigorously and give off carbon dioxide
 - float and show no reaction
- An atom of lithium contains electrons, protons and neutrons.
Which of these particles are found in the nucleus of this atom?
 - electrons and protons
 - electrons and neutrons
 - protons and electrons
 - protons and neutrons

9. Some salts can be made by reacting an acid with an alkali.
The reaction between the acid and alkali is called
- A thermal decomposition
 - B combustion
 - C neutralisation
 - D a physical change

Making cakes

10. Baking powder is often used in cake mixtures.
The baking powder is used to
- A make the cake rise
 - B add flavour
 - C preserve the cake
 - D help the cake set
11. Baking powder contains sodium hydrogencarbonate and an acidic substance.
Baking powder is
- A an element
 - B a compound
 - C a mixture
 - D a solution
12. Some cakes contain artificial sweeteners.
Artificial means that the sweetener
- A contains no chemical substances
 - B is man-made
 - C has no taste
 - D is obtained from sea water
13. When a cake is cooked, the cake mixture changes.
Cooking always causes
- A a physical change
 - B a chemical change
 - C neutralisation
 - D precipitation

Metal ores

14. Gold can be found uncombined in the Earth's crust.
The gold is uncombined because it is

- A expensive
- B rare
- C unreactive
- D an element

15. Iron ore is found in the Earth's crust.
Iron is extracted from its ore by

- A electrolysis
- B distillation
- C heating with carbon
- D heating with oxygen

16. The table shows some possible uses of gold, copper and iron.
Which row of the table is correct?

	use of gold	use of copper	use of iron
A	jewellery	electrical wiring	making steel
B	jewellery	making steel	electrical wiring
C	making steel	jewellery	making steel
D	making steel	electrical wiring	jewellery

20. An atom of an element contains 19 electrons, 20 neutrons and 19 protons.

The element has an atomic number of

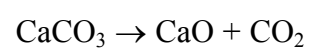
- A 19
- B 20
- C 38
- D 39

21. Which row in the table shows the correct charges on an electron, a neutron and a proton?

	electron	neutron	proton
A	negative	positive	no charge
B	negative	no charge	positive
C	no charge	positive	negative
D	positive	no charge	negative

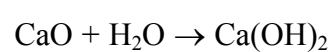
Calcium compounds

22. When calcium carbonate is heated strongly, calcium oxide is formed.
The equation for the reaction is



This reaction is an example of

- A hydration
 - B neutralisation
 - C oxidation
 - D thermal decomposition
23. Calcium oxide can be used to make calcium hydroxide.
The equation for the reaction is



This reaction is an example of

- A hydration
 - B neutralisation
 - C oxidation
 - D thermal decomposition
24. A solution of calcium hydroxide is used to test for
- A oxygen
 - B carbon dioxide
 - C chlorine
 - D argon

TOTAL FOR FOUNDATION TIER PAPER: 24 MARKS

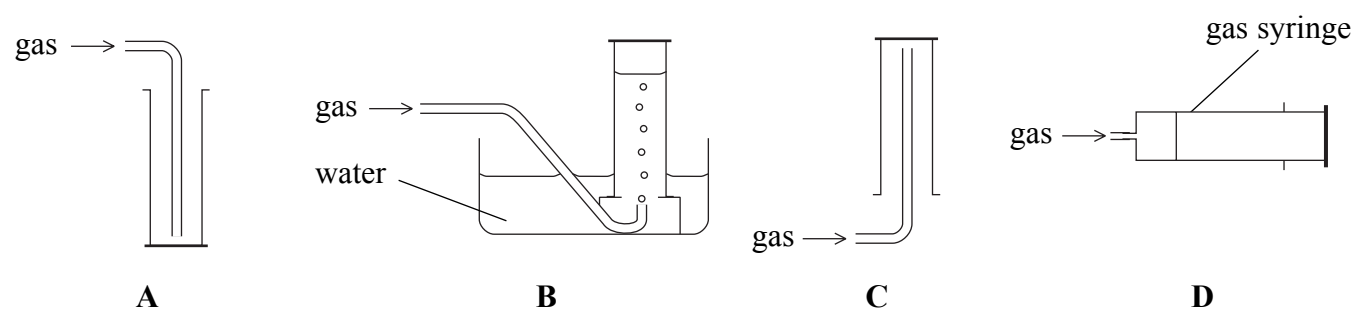
Foundation tier candidates do not answer any more questions after question 24.

**Questions 25 to 40 must be answered by Higher tier candidates only.
Foundation tier candidates do not answer questions 25 to 40.**

Detecting a gas

- 25.** A gas has been produced by a chemist.
It is not known if the gas is soluble in water nor how dense it is.

Which diagram shows the method of collection that can be used whatever the properties of the gas?



- 26.** The chemist thought the gas might be ammonia.
To test if she was correct, she should test the gas with
- A** a lighted splint and expect a pop sound
 - B** a glowing splint and expect the splint to relight
 - C** moist red litmus paper and expect the litmus paper to turn blue
 - D** limewater and expect the limewater to go milky
- 27.** The formula of a molecule of ammonia is
- A** NH^3
 - B** NH_3
 - C** N_3H
 - D** NH_4
- 28.** Which of the following statements about ammonia are true?
- 1 ammonia can be used to make nitric acid
 - 2 ammonia is more dense than air and is collected by downward delivery
- A** 1 only
 - B** 2 only
 - C** 1 and 2
 - D** neither 1 nor 2

Salts

29. Lead nitrate solution is reacted with potassium iodide solution.
A precipitate of lead iodide is formed.
A pure, dry sample of the lead iodide could be obtained from the reaction mixture by
- A** evaporating
B filtering, then drying
C filtering, then washing, then drying
D washing, then filtering, then drying
30. KNO_3 is the formula of a salt.
The name of this salt is
- A** potassium nitride
B potassium nitrogen oxide
C potassium nitrate
D potassium nitro-oxide
31. Salts of copper, potassium and sodium are used to produce colours in firework flames.
Which row of the table shows the correct colour produced by each of these salts?

	copper salt	potassium salt	sodium salt
A	green-blue	yellow	lilac
B	green-blue	lilac	yellow
C	lilac	green-blue	yellow
D	lilac	yellow	green-blue

32. The balanced equation for the reaction of calcium carbonate with hydrochloric acid is
- A** $\text{CaCO}_3 + \text{HCl} \rightarrow \text{CaCl} + \text{H}_2\text{O} + \text{CO}_2$
B $\text{CaCO}_3 + \text{HCl}_2 \rightarrow \text{CaCl}_2 + \text{H}_2\text{O} + \text{CO}_2$
C $\text{CaCO}_3 + 2\text{HCl} \rightarrow \text{CaCl}_2 + \text{H}_2\text{O} + \text{CO}_2$
D $\text{CaCO}_3 + \text{H}_2\text{Cl} \rightarrow \text{CaCl} + \text{H}_2\text{O} + \text{CO}_2$

Halogens

33. Which row of the table shows a halogen with its correct colour and state at room temperature?

	halogen	colour	state at room temperature
A	fluorine	pale yellow	gas
B	chlorine	grey	solid
C	bromine	yellow-green	liquid
D	iodine	purple	solid

34. Which of these statements about the halogens are correct?

- 1 the halogens all exist as diatomic molecules
 2 the halogens increase in reactivity with increasing atomic number

- A** 1 only
B 2 only
C 1 and 2
D neither 1 nor 2

35. Chlorine reacts with potassium bromide solution.
 The equation for the reaction is

- A** $\text{Cl} + \text{KBr} \rightarrow \text{KCl} + \text{Br}$
B $\text{Cl}_2 + 2\text{KBr} \rightarrow 2\text{KCl} + 2\text{Br}$
C $\text{Cl}_2 + \text{KBr}_2 \rightarrow \text{KCl}_2 + \text{Br}_2$
D $\text{Cl}_2 + 2\text{KBr} \rightarrow 2\text{KCl} + \text{Br}_2$

Acids

36. The table shows some possible uses of ethanoic acid, citric acid and phosphoric acid.
 Which row of the table is correct?

	use of ethanoic acid	use of citric acid	use of phosphoric acid
A	as food flavouring	in rust remover	as vinegar
B	in rust remover	as food flavouring	as vinegar
C	in rust remover	as vinegar	as food flavouring
D	as vinegar	as food flavouring	in rust remover

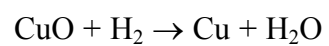
Metals and their ores

37. Many metals can be found in the Earth's crust.
Platinum is found uncombined.
Aluminium is extracted using electrolysis.
Lead is extracted using carbon.

Which is the correct order of reactivity of platinum, aluminium and lead?

	most reactive	—————>	least reactive
A	aluminium	platinum	lead
B	platinum	lead	aluminium
C	aluminium	lead	platinum
D	lead	aluminium	platinum

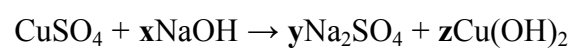
38. When copper oxide is heated in hydrogen, copper is produced.



Which of these statements about this reaction are correct?

- | | | |
|--|---|--|
| | 1 | copper oxide is reduced |
| | 2 | the reaction is a dehydration reaction |
- A 1 only
B 2 only
C both 1 and 2
D neither 1 nor 2
39. When sodium hydroxide solution is added to copper sulphate solution, a precipitate forms.
The colour of the precipitate is
- A pale green
B red-brown
C pale blue
D white

40. The equation for the reaction between sodium hydroxide solution and copper sulphate solution is



Which row of the table shows values of **x**, **y** and **z** that give a balanced equation?

	x	y	z
A	2	1	2
B	2	1	1
C	2	2	1
D	2	2	2

TOTAL FOR HIGHER TIER PAPER: 24 MARKS

END

BLANK PAGE

BLANK PAGE

BLANK PAGE