

Surname	Initial(s)
Signature	

Paper Reference(s)

**5007 5035**

# Edexcel GCSE

**Science (5007)**

**Chemistry (5035)**

C1a – Topics 5 and 6

**Foundation and Higher Tier**

Friday 12 November 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.

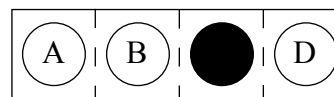
**Before the test begins:**

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.

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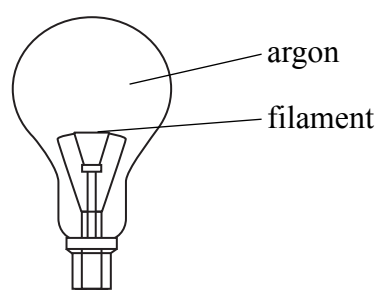
*Turn over*

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

**Noble gases**

1. Argon is a noble gas.  
Electric light bulbs are filled with argon to prevent the hot filament from burning.



Argon is used because it is

- A** unreactive  
**B** a coloured gas  
**C** denser than air  
**D** flammable
2. The symbol for an atom of argon is
- A** aR  
**B** Ar  
**C** AR  
**D** ar
3. Helium and neon are noble gases. They have similar chemical properties.  
Helium and neon
- A** form compounds  
**B** react with oxygen  
**C** are in the same group in the periodic table  
**D** react with each other





### Common salt

Common salt is sodium chloride.

13. Common salt can be extracted from the Earth.  
This common salt is
- A artificial
  - B natural
  - C man-made
  - D an element
14. Dilute hydrochloric acid reacts with sodium hydroxide solution to form sodium chloride and water.  
This reaction is an example of
- A hydration
  - B oxidation
  - C neutralisation
  - D precipitation
15. Salt is often added to crisps.  
The salt
- A makes the crisps more healthy to eat
  - B adds flavour to the crisps
  - C adds colour to the crisps
  - D makes the crisps softer
16. A flame test can be used to identify sodium compounds.  
The colour produced in the flame is
- A blue
  - B yellow
  - C green
  - D red

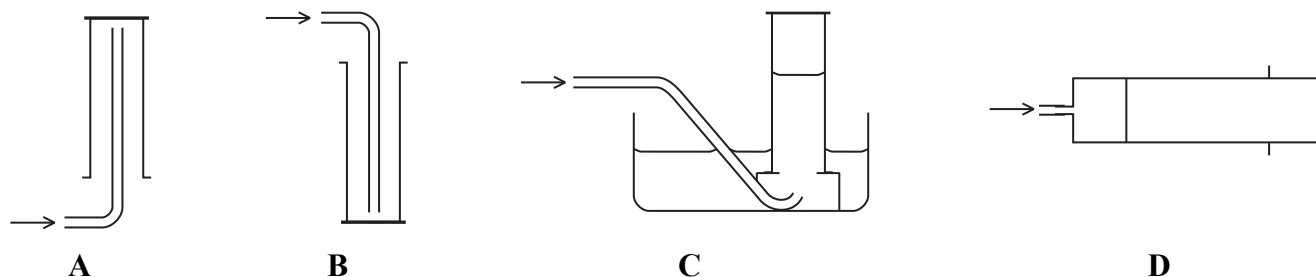
**Higher tier candidates start at question 17 and answer questions 17 to 40.**  
**Questions 17 to 24 must be answered by all candidates: Foundation tier and Higher tier.**

**Everyday metals**

17. Iron is an important metal.  
Most iron is found in the Earth's crust as
- A the metal
  - B alloys
  - C steel
  - D ores
18. When copper is heated in air it reacts to form copper oxide.
- $$\text{copper} + \text{oxygen} \rightarrow \text{copper oxide}$$
- In this reaction copper is
- A reduced
  - B hydrated
  - C oxidised
  - D thermally decomposed
19. Zinc oxide can be converted to zinc by heating the zinc oxide with
- A copper
  - B oxygen
  - C carbon dioxide
  - D carbon
20. Lead oxide can be converted to lead by heating it in hydrogen.
- $$\text{lead oxide} + \text{hydrogen} \rightarrow \text{lead} + \text{water}$$
- In this reaction the lead oxide is
- A dehydrated
  - B hydrated
  - C reduced
  - D oxidised

### Baking powder

21. The main ingredient in baking powder is a sodium compound.  
This sodium compound is
- A sodium hydroxide
  - B sodium carbonate
  - C sodium oxide
  - D sodium hydrogencarbonate
22. When baking powder is used, the sodium compound reacts with an acidic substance to produce carbon dioxide.  
In this reaction the acidic substance is
- A thermally decomposed
  - B neutralised
  - C hydrated
  - D dehydrated
23. The test to prove that a gas is carbon dioxide is that it
- A puts out a glowing splint
  - B relights a glowing splint
  - C turns moist blue litmus paper red
  - D turns limewater milky
24. Carbon dioxide is denser than air and slightly soluble in water.  
Which apparatus could **not** be used to collect carbon dioxide free from air?



**TOTAL FOR FOUNDATION TIER PAPER: 24 MARKS**

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





### Halogens

29. In which of these mixtures would a displacement reaction occur?

- A chlorine and potassium fluoride solution
- B iodine and potassium chloride solution
- C iodine and potassium bromide solution
- D chlorine and potassium iodide solution

30. Which row of the table describes fluorine and iodine at room temperature?

	fluorine	iodine
A	yellow-green gas	grey solid
B	pale yellow gas	purple solid
C	pale yellow gas	grey solid
D	yellow-green gas	purple gas

31. Which of the following statements about the halogens are correct?

- 1 their reactivity increases as their atomic numbers increase
- 2 their boiling points decrease as their atomic numbers increase

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

32. Chlorine reacts with calcium bromide solution.  
The equation for the reaction is

- A  $\text{Cl} + \text{CaBr} \rightarrow \text{CaCl} + \text{Br}$
- B  $\text{Cl}_2 + \text{CaBr}_2 \rightarrow \text{CaCl}_2 + \text{Br}_2$
- C  $2\text{Cl} + \text{CaBr}_2 \rightarrow \text{CaCl}_2 + 2\text{Br}$
- D  $\text{Cl}_2 + 2\text{CaBr} \rightarrow 2\text{CaCl} + \text{Br}_2$

### Salts

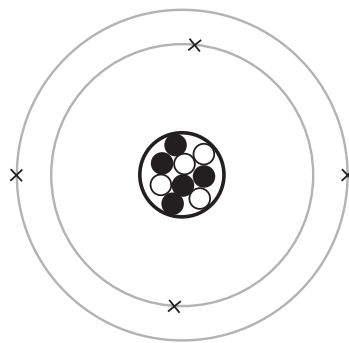
33. Sodium hydroxide solution was added to a solution of a salt.  
A red-brown precipitate was formed.  
The formula of the precipitate is
- A  $\text{Fe(OH)}_2$
  - B  $\text{Cu(OH)}_2$
  - C  $\text{Zn(OH)}_2$
  - D  $\text{Fe(OH)}_3$
34. The salt calcium iodate contains the elements
- A calcium and iodine only
  - B calcium and iron only
  - C calcium, iodine and oxygen
  - D calcium, iron and oxygen
35. Which of these substances will react together safely to produce a salt?
- A potassium and dilute sulphuric acid
  - B potassium and ammonia solution
  - C dilute sulphuric acid and ammonia solution
  - D potassium chloride and dilute hydrochloric acid
36. Lead sulphate is an insoluble salt.  
It can be prepared by precipitation.  
The best way to produce a pure sample of lead sulphate is to
- A add excess lead carbonate to dilute sulphuric acid
  - B add excess lead oxide to dilute sulphuric acid
  - C add lead nitrate solution to dilute sulphuric acid
  - D add excess lead to dilute sulphuric acid

**Metals**

37. Sodium reacts with water.  
The equation for this reaction is

- A  $\text{Na} + \text{H}_2\text{O} \rightarrow \text{NaOH} + \text{H}$
- B  $2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$
- C  $2\text{Na} + \text{H}_2\text{O} \rightarrow \text{Na}_2\text{O} + \text{H}_2$
- D  $\text{Na} + \text{H}_2\text{O} \rightarrow \text{NaO} + \text{H}_2$

38. Beryllium is a metal.  
The diagram shows the positions of electrons, neutrons and protons in an atom of beryllium.



How many neutrons are in this atom?

- A 4
- B 5
- C 9
- D 13

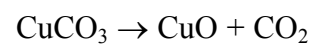
**Useful products**

**39.** Which of the following statements about ammonia are correct?

- 1 ammonia is used to manufacture nitric acid
- 2 ammonia turns moist red litmus paper blue

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

**40.** The equation represents the reaction that takes place when copper carbonate is heated.



Which of these statements about the reaction are correct?

- 1 the reaction is an example of thermal decomposition
- 2 during the reaction the copper carbonate is oxidised to copper oxide

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

**TOTAL FOR HIGHER TIER PAPER: 24 MARKS**

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**END**