

13 Carbonate

Question Paper

Level	IGCSE
Subject	Chemistry (0620)
Exam Board	Cambridge International Examinations (CIE)
Topic	Carbonates
Sub-Topic	13 Carbonate
Booklet	Question Paper

Time Allowed: 17 minutes

Score: /14

Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	75%	60%	45%	35%	25%	<25%

- 1 When limestone is heated it forms lime (calcium oxide) and carbon dioxide.



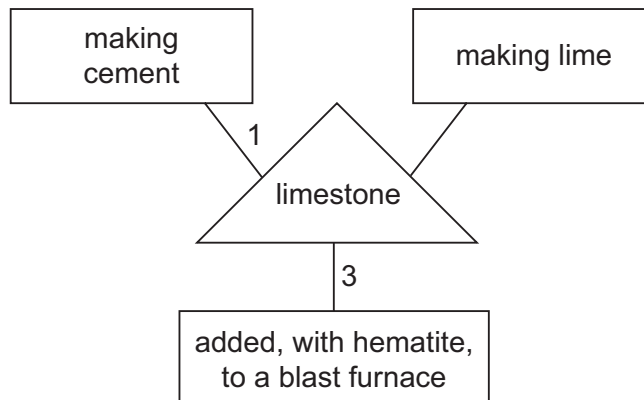
Which statement is **not** correct?

- A Carbon dioxide is a greenhouse gas which may contribute to climate change.
 - B Slaked lime is used to neutralise industrial waste.
 - C The lime can be used to treat alkaline soil.
 - D This reaction is an example of thermal decomposition.
- 2 Lime (calcium oxide) is used to treat waste water from a factory.

Which substance is removed by the lime?

- A ammonia
 - B sodium chloride
 - C sodium hydroxide
 - D sulfuric acid
- 3 Which process is used to make lime (calcium oxide) from limestone (calcium carbonate)?
- A chromatography
 - B electrolysis
 - C fractional distillation
 - D thermal decomposition

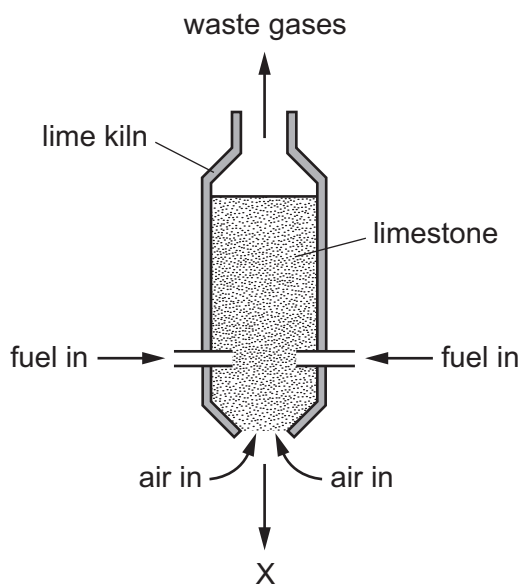
4 A student is asked to draw a diagram showing the uses of limestone.



Which numbered lines show a correct use of limestone?

- A 1, 2
- B 1 and 2 only
- C 1 and 3 only
- D 2 and 3 only

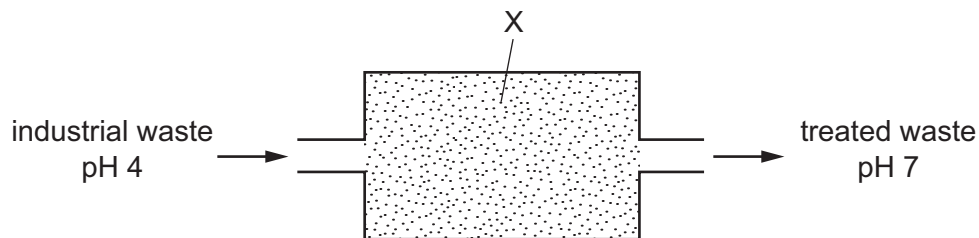
5 The diagram represents a lime kiln.



What leaves the furnace at X?

- A calcium carbonate
- B calcium hydroxide
- C calcium oxide
- D calcium sulfate

6 Substance X is used to treat industrial waste.



What is X and which type of reaction occurs during the treatment?

	X	type of reaction
A	calcium oxide (lime)	neutralisation
B	calcium oxide (lime)	redox
C	carbon	neutralisation
D	carbon	redox

7 The diagram shows the soil pH range over which a vegetable grows well.

The pH of the soil to be used is 5.5.



Why is lime added to the soil before planting the vegetable?

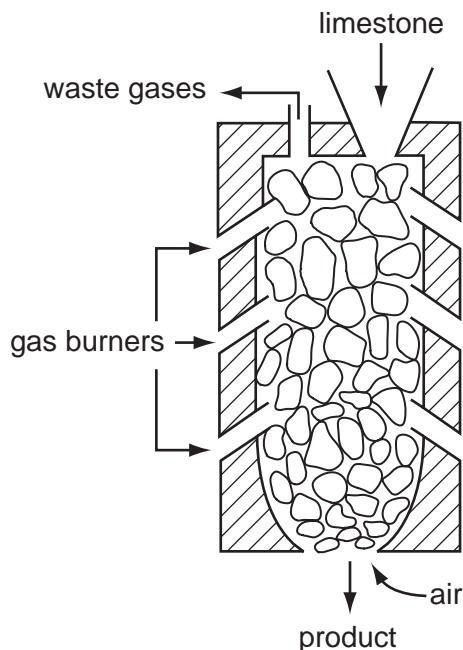
- A** The lime acts as a catalyst.
- B** The lime changes the soil acidity.
- C** The lime is an indicator.
- D** The lime supplies nitrogen.

- 8 When compound X is heated, it changes colour from green to black. Compound Y is formed and a gas is given off which turns limewater milky.

What are X and Y?

	X	Y
A	calcium carbonate	calcium oxide
B	copper carbonate	carbon
C	copper carbonate	copper oxide
D	copper sulfate	copper oxide

- 9 The diagram shows a kiln used to heat limestone.



What is the product and what waste gas is formed?

	product	gas
A	lime, CaO	carbon monoxide
B	lime, CaO	carbon dioxide
C	slaked lime, Ca(OH) ₂	carbon monoxide
D	slaked lime, Ca(OH) ₂	carbon dioxide

- 10 In which process is carbon dioxide **not** formed?
- A burning of natural gas
 - B fermentation
 - C heating lime
 - D respiration
- 11 Which process does **not** produce carbon dioxide?
- A fermentation
 - B respiration
 - C the production of lime from limestone
 - D the treatment of acidic soil with lime
- 12 Carbon dioxide is produced when dilute hydrochloric acid reacts with
- A calcium sulfate.
 - B carbon.
 - C copper(II) carbonate.
 - D limewater.

13 Gas X is a waste gas from digestion in animals.

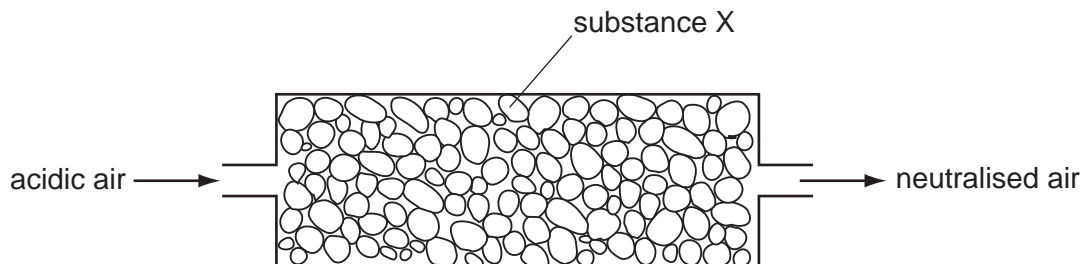
Gas Y is formed when gas X is burnt with a small amount of oxygen.

Gas Z is formed when gas X is burnt with an excess of oxygen.

What are X, Y and Z?

	X	Y	Z
A	carbon dioxide	methane	carbon monoxide
B	carbon monoxide	methane	carbon dioxide
C	methane	carbon dioxide	carbon monoxide
D	methane	carbon monoxide	carbon dioxide

14 Air containing an acidic impurity was neutralised by passing it through a column containing substance X.



What is substance X?

- A calcium oxide
- B sand
- C sodium chloride
- D concentrated sulfuric acid