

- 1 Which statement about methane is **not** correct?
- A It is a greenhouse gas.
  - B It is an alkene.
  - C It is formed by decomposition of vegetation.
  - D It is used as a fuel.
- 2 Which process does **not** produce carbon dioxide?
- A complete combustion of a fossil fuel
  - B fermentation
  - C reaction of an alkali with a carbonate
  - D respiration
- 3 Carbon dioxide and methane both contribute to climate change.
- Which process produces both gases?
- A complete combustion of natural gas
  - B farming cattle
  - C heating calcium carbonate
  - D respiration
- 4 In which reaction is carbon dioxide **not** produced?
- A complete combustion of petrol
  - B hydrochloric acid reacting with magnesium
  - C respiration
  - D thermal decomposition of limestone

- 5 Unwanted vegetation is sometimes placed in a bin where it decays to form compost. This compost can be used to fertilise soils.

Which gas is likely to be present in a higher percentage inside the bin than in the air outside the bin?

- A carbon monoxide
- B methane
- C oxygen
- D sulfur dioxide

- 6 Carbon dioxide and methane are 'greenhouse gases' which contribute to global warming.

Which process does **not** increase global warming?

- A burning fossil fuels
- B decay of organic waste
- C farming cattle for beef
- D growing crops such as sugar cane

- 7 These statements are about a gas.

- 1 It is produced by thermal decomposition of a carbonate.
- 2 It is produced by the fermentation of glucose.
- 3 It makes up 1% of unpolluted air.
- 4 It is produced during the production of steel from iron.

Which statements are correct for carbon dioxide?

- A 1 and 2 only    B 1, 2 and 3    C 1, 2 and 4    D 1, 3 and 4

8 Four reactions produce carbon dioxide.

- 1 respiration
- 2 fermentation
- 3 combustion of methane
- 4 manufacture of lime

Which reactions do **not** use oxygen from the air?

- A** 1 and 2      **B** 1 and 3      **C** 2 and 4      **D** 3 and 4

9 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
<b>A</b>	carbon dioxide	methane	carbon monoxide
<b>B</b>	carbon monoxide	methane	carbon dioxide
<b>C</b>	methane	carbon dioxide	carbon monoxide
<b>D</b>	methane	carbon monoxide	carbon dioxide

10 The list gives four experiments carried out with calcium carbonate.

- 1 acid added
- 2 alkali added
- 3 heated strongly
- 4 water added

Which experiments produce carbon dioxide?

- A** 1 and 2      **B** 1 and 3      **C** 2 and 3      **D** 2 and 4

11 Which statement about methane is **not** correct?

- A** It is a liquid produced by distilling petroleum.
- B** It is produced as vegetation decomposes.
- C** It is produced by animals, such as cows.
- D** It is used as a fuel.

12 Which pollutant gas is produced by the decomposition of vegetation?

- A** carbon monoxide
- B** methane
- C** nitrogen oxide
- D** sulfur dioxide

13 In which process is carbon dioxide **not** formed?

- A** burning of natural gas
- B** fermentation
- C** heating lime
- D** respiration

14 Which information about carbon dioxide and methane is correct?

		carbon dioxide	methane
<b>A</b>	formed when vegetation decomposes	✓	✗
<b>B</b>	greenhouse gas	✓	✓
<b>C</b>	present in unpolluted air	✗	✗
<b>D</b>	produced during respiration	✗	✓

key  
✓ = true  
✗ = false

15 The list shows four methods that were suggested for the formation of carbon dioxide.

- 1 action of an alkali on a carbonate
- 2 action of heat on a carbonate
- 3 complete combustion of methane
- 4 reaction of a carbonate with oxygen

Which methods would result in the production of carbon dioxide?

- A** 1 and 2      **B** 1 and 4      **C** 2 and 3      **D** 3 and 4

16 Which process does **not** produce carbon dioxide?

- A** combustion of petrol  
**B** reaction between an acid and a metal hydroxide  
**C** reaction between an acid and a carbonate  
**D** respiration

17 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
<b>A</b>	carbon dioxide	methane	carbon monoxide
<b>B</b>	carbon monoxide	methane	carbon dioxide
<b>C</b>	methane	carbon dioxide	carbon monoxide
<b>D</b>	methane	carbon monoxide	carbon dioxide

18 Carbon dioxide and methane are 'greenhouse gases' which contribute to global warming.

Which process does **not** increase global warming?

- A** burning fossil fuels
- B** decay of organic waste
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19 Which pollutant gas is produced by the decomposition of vegetation?

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- B** methane
- C** nitrogen oxide
- D** sulfur dioxide

20 The table gives the composition of the atmosphere of four newly discovered planets.

planet	composition of atmosphere
W	argon, carbon dioxide and oxygen
X	argon, nitrogen and oxygen
Y	argon, carbon dioxide and methane
Z	methane, nitrogen and oxygen

On which planets is the greenhouse effect likely to occur?

- A** W only
- B** W, X and Z
- C** W and Y only
- D** W, Y and Z

21 Greenhouse gases may contribute to climate change.

Two of these gases are emitted into the atmosphere as a result of processes within animals.

Gas .....1..... is produced by process .....3..... .

Gas .....2..... is produced by process .....4..... .

Which words correctly complete gaps 1, 2, 3 and 4?

	1	2	3	4
<b>A</b>	CO	C <sub>2</sub> H <sub>6</sub>	digestion	respiration
<b>B</b>	CO	C <sub>2</sub> H <sub>6</sub>	respiration	digestion
<b>C</b>	CO <sub>2</sub>	CH <sub>4</sub>	digestion	respiration
<b>D</b>	CO <sub>2</sub>	CH <sub>4</sub>	respiration	digestion

22 Which information about carbon dioxide and methane is correct?

		carbon dioxide	methane
<b>A</b>	formed when vegetation decomposes	✓	✗
<b>B</b>	greenhouse gas	✓	✓
<b>C</b>	present in unpolluted air	✗	✗
<b>D</b>	produced during respiration	✗	✓

23 Which statement about methane is **not** correct?

- A** It is a liquid produced by distilling petroleum.
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- D** It is used as a fuel.

24 A newspaper article claims that carbon dioxide is formed as follows.

- 1 during respiration
- 2 when calcium carbonate reacts with hydrochloric acid
- 3 when methane burns in air

Which statements are correct?

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