

Atmosphere and environment MCQS

Compiled by : Mustafa Asif

- 1 Pollutant gases are released by the bacterial decay of vegetable matter.

The bacterial decay of vegetable matter is the main source of which gas?

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

- 2 Lakes contain a variety of dissolved substances.

Which substance is responsible for eutrophication in lakes?

- A metal compounds
- B nitrate fertilisers
- C oxygen
- D sulfuric acid

- 3 Several different treatments are used to purify the water supply.

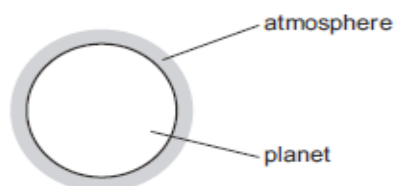
Which impurities can be removed by which treatment?

| | filtration | use of carbon | chlorination |
|----------|------------------|------------------------------|------------------------------|
| A | harmful microbes | solids | unpleasant odours and tastes |
| B | harmful microbes | unpleasant odours and tastes | solids |
| C | solids | harmful microbes | unpleasant odours and tastes |
| D | solids | unpleasant odours and tastes | harmful microbes |

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- 4 A new planet has been discovered and its atmosphere has been analysed.



The table shows the composition of its atmosphere.

| gas | percentage by volume |
|----------------|----------------------|
| carbon dioxide | 4 |
| nitrogen | 72 |
| oxygen | 24 |

Which gases are present in the atmosphere of the planet in a higher percentage than they are in the Earth's atmosphere?

- A carbon dioxide and oxygen
- B carbon dioxide only
- C nitrogen and oxygen
- D nitrogen only

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- 5 Sulfur dioxide, carbon monoxide and oxides of nitrogen are common gaseous pollutants found in the air.

Which pollutants contribute to acid rain?

- A carbon monoxide and sulfur dioxide
 - B oxides of nitrogen and sulfur dioxide
 - C oxides of nitrogen only
 - D sulfur dioxide only
- 6 Which compound is **not** used as a fertiliser?
- A ammonium phosphate
 - B ammonium sulfate
 - C calcium carbonate
 - D potassium nitrate
- 7 Lime (calcium oxide) is used to treat waste water from a factory.

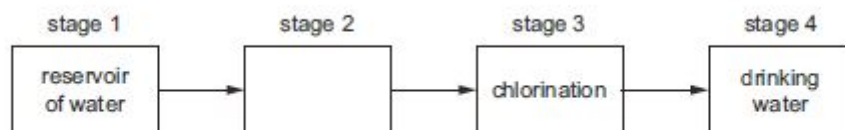
Which substance is removed by the lime?

- A ammonia
- B sodium chloride
- C sodium hydroxide
- D sulfuric acid

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- 8 The diagram shows how water is treated to make it suitable for drinking.



What happens in stage 2?

- A condensation
 - B sublimation
 - C evaporation
 - D filtration
- 9 A farmer treats a field with calcium hydroxide to make it less acidic.
- When the farmer adds ammonium nitrate fertiliser to the field immediately after the calcium hydroxide, they react.
- Why does this reaction make the fertiliser less effective?
- A It makes ammonia gas, so less nitrogen is absorbed by the soil.
 - B It makes an acid, making the soil acidic again.
 - C It makes nitrogen gas, so less nitrogen is absorbed by the soil.
 - D It makes the fertiliser too strong, stopping the plants growing so well.
- 10 Which row showing an air pollutant and its major source is **not** correct?

| | pollutant | major source of pollutant |
|---|--------------------|-------------------------------------|
| A | carbon monoxide | complete combustion of carbon fuels |
| B | lead compounds | leaded petrol |
| C | oxides of nitrogen | car engines |
| D | sulfur dioxide | fossil fuels containing sulfur |

- 11 Methane and carbon dioxide are both greenhouse gases.

Which row identifies a source of methane and a source of carbon dioxide?

| | source of methane | source of carbon dioxide |
|---|-----------------------------|-----------------------------|
| A | decomposition of vegetation | hydrogen car exhausts |
| B | digestion in animals | diesel car exhausts |
| C | petrol car exhausts | decomposition of vegetation |
| D | respiration | petrol car exhausts |

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- 12 Which pair of gases are both non-acidic?
- A ammonia and methane
 - B carbon dioxide and ammonia
 - C methane and nitrogen dioxide
 - D nitrogen dioxide and carbon dioxide
- 13 Which term correctly describes the conversion of seawater into drinkable water?
- A chlorination
 - B desalination
 - C filtration
 - D neutralisation

- 14 Seawater is desalinated to make it drinkable.

What is the main substance removed by desalination?

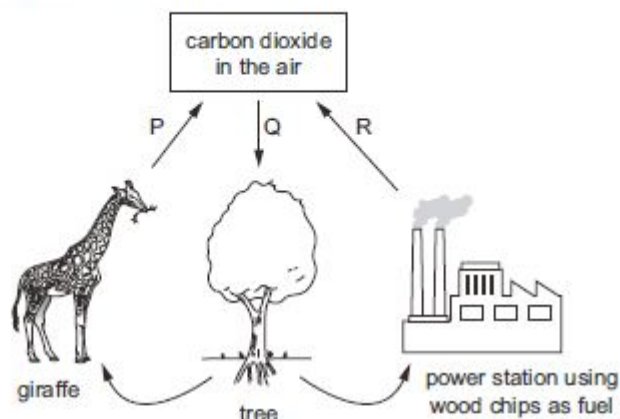
- A detergent
 - B fertiliser
 - C sewage
 - D sodium chloride
- 15 Which row is correct for both carbon dioxide and methane?

| | causes climate change | produced by burning fuels | produced by living organisms |
|---|-----------------------|---------------------------|------------------------------|
| A | ✓ | ✓ | ✓ |
| B | ✓ | ✓ | x |
| C | ✓ | x | ✓ |
| D | x | ✓ | ✓ |

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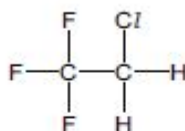
- 16 The diagram shows part of the carbon cycle.



What are processes P, Q and R?

| | P | Q | R |
|---|----------------|----------------|----------------|
| A | combustion | photosynthesis | respiration |
| B | photosynthesis | combustion | respiration |
| C | respiration | combustion | photosynthesis |
| D | respiration | photosynthesis | combustion |

- 17 CFC compounds were used as aerosol propellants. The structure of one CFC compound is shown.



Which element in this compound causes a depletion of ozone in the atmosphere?

- A carbon
 - B chlorine
 - C fluorine
 - D hydrogen
- 18 What is removed or destroyed when water is desalinated to make it drinkable?
- A bad odours
 - B harmful bacteria
 - C sodium chloride
 - D solid particles

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- 19 Dry air is a mixture of gases of which 99% is nitrogen and oxygen.
What is the main constituent of the remaining 1%?
- A argon
 - B helium
 - C hydrogen
 - D water vapour
- 20 Why is chlorine added to the water supply?
- A Chlorine is used to desalinate the water.
 - B Chlorine kills bacteria that may be present in the water.
 - C Chlorine precipitates solids that may be present in the water.
 - D Chlorine removes tastes and odours from the water.
- 21 A farmer spread ammonium nitrate, a nitrogenous fertiliser, on a field. The next day he spread calcium hydroxide on the same field. This caused a loss of nitrogen from the ammonium nitrate.
Which chemical reaction occurred?
- A The calcium ions reacted with the ammonium ions, producing ammonia gas.
 - B The calcium ions reacted with the nitrate ions, producing oxides of nitrogen.
 - C The hydroxide ions reacted with the ammonium ions, producing ammonia gas.
 - D The hydroxide ions reacted with the nitrate ions, producing oxides of nitrogen.

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22 Which row correctly compares carbon dioxide and methane?

| | both contain carbon | both are described as a greenhouse gas | both lower the pH of water when they dissolve in it |
|---|---------------------|--|---|
| A | ✓ | X | ✓ |
| B | ✓ | ✓ | X |
| C | X | ✓ | ✓ |
| D | X | ✓ | X |

23 Fossil fuels are used to power some internal combustion engines.

Which pollutants are produced by an internal combustion engine burning fossil fuels?

- 1 carbon monoxide
- 2 nitrogen oxides
- 3 sulfur dioxide

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

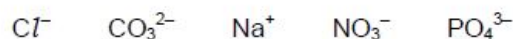
24 Bottled fruit juice may have small amounts of sulfur dioxide added.

What is the purpose of this?

- A to adjust the acidity of the fruit juice
- B to kill any bacteria present
- C to improve the flavour of the fruit juice
- D to neutralise any alkalis present

25 Dissolved substances in water can cause eutrophication.

How many of the ions shown cause this effect?



A 1 B 2 C 3 D 4

26 Which list contains only gases that are always present in unpolluted air?

- A oxygen, nitrogen, carbon dioxide, argon, carbon monoxide, nitrogen dioxide
- B oxygen, nitrogen, carbon dioxide, argon, neon
- C oxygen, nitrogen, carbon dioxide, nitrogen dioxide, ozone
- D oxygen, nitrogen, carbon monoxide, methane, sulfur dioxide

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- 27 The table shows treatments used for drinking water supplies and reasons for using those treatments.

Which row is correct?

| | method of water treatment | reason |
|----------|---------------------------|----------------|
| A | chlorination | removes tastes |
| B | desalination | removes solids |
| C | filtration | removes salt |
| D | use of carbon | removes odours |

- 28 The table shows some atmospheric pollutants and their possible effects.

Which row is **not** correct?

| | pollutant | effect |
|----------|-----------------|------------------------------------|
| A | CFCs | cause depletion of the ozone layer |
| B | CO ₂ | forms photochemical smog |
| C | CO | is poisonous to humans |
| D | NO ₂ | forms acid rain |

- 29 Which pollutant causes eutrophication in rivers?

- A** acid rain
- B** carbon monoxide
- C** fertiliser
- D** metal compounds

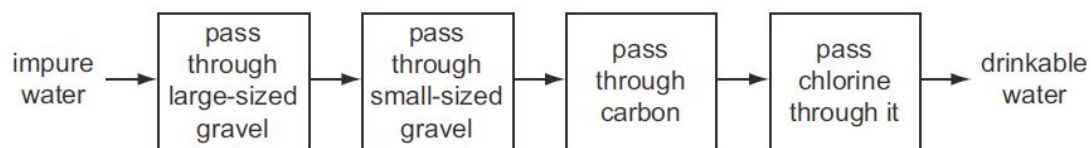
- 30 Which ion is present in both sewage and fertilisers and can cause eutrophication when it enters rivers?

- A** carbonate
- B** chloride
- C** nitrate
- D** sulfate

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- 31 The flow chart shows how impure water can be treated to produce drinkable water.



What is **not** removed from the water by this process?

- A clay particles
- B microbes
- C nitrates
- D odours

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Marking Scheme

1-B 25-B

2-B 26-B

3-D 27-D

4-A 28-B

5-B 29-C

6-C 30-C

7-D 31-C

8-D

9-A

10-A

11-D

12-A

13-B

14-D

15-C

16-D

17-B

18-C

19-C

20-C

21-C

22-B

23-A

24-B