深圳香港培僑書院龍華信義學校
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Chemistry
Topic 1 Planet Earth
Pastpaper MC questions

Name：
Class：

2024-25

SECTION 1 Planet Earth

Multiple-Choice Questions

CE94_44

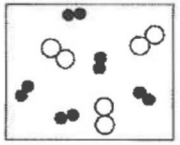
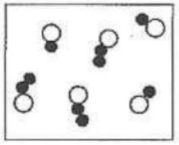
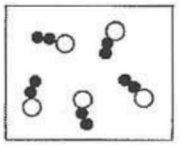
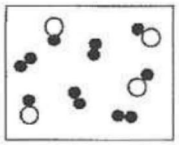
Which of the following methods can be used to distinguish between solid sodium carbonate and solid calcium carbonate?

(1) Heating the solid and testing the gaseous product with lime water.
(2) Testing the solubility of the solid in water.
(3) Conducting a flame test on the solid.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

CE99_01

Which of the following diagrams can represent a mixture of two compounds?
(In these diagrams, ● and ○ represent a nitrogen atom and an oxygen atom respectively.)

A. 
B. 
C. 
D. 

CE99_45

	1st statement	2nd statement
	Sulphur is classified as a non-metal.	Sulphur does not react with dilute acids.

CE04_11

A white solid is found around the mouth of a reagent bottle containing lime water. The white solid is likely to be

A. calcium oxide.
B. calcium sulphate.
C. calcium carbonate.
D. calcium hydrogencarbonate.

CE04_29

Refer to the melting points and boiling points of four substances at 1 atm pressure as listed in the table below:

Substance	Melting point/°C	Boiling point/°C
argon	– 189	– 186
bromine	– 7	59
chlorine	– 101	– 35
sulphur dioxide	– 75	– 10

Which substance exists as a liquid at – 90°C and 1 atm pressure?

A. argon
B. bromine
C. chlorine
D. sulphur dioxide

CE05SP_02

The hazard warning label shown below is found on a compressed gas cylinder.

Which of the following gases may be contained in the cylinder?

A. hydrogen
B. oxygen
C. chlorine
D. argon

CE05SP_18

A white solid dissolves in water to give a colourless solution. The solution reacts with dilute hydrochloric acid to give a gas. The solid is probably

A. calcium oxide.
B. calcium carbonate.
C. potassium hydroxide.
D. potassium carbonate.

CE05_05

When a flame test is performed on copper(II) chloride, what is the colour of the flame observed?

A. golden yellow
B. pale purple
C. brick-red
D. bluish-green

CE05_19

Which of the following correctly describes the sequence of procedures to separate sand, salt and water from a mixture of sand and salt solution?

A. filtration, evaporation
B. filtration, distillation
C. crystallisation, filtration
D. crystallisation, filtration, distillation

CE06_25

Which of the following substances contain calcium carbonate as the main chemical constituent?

(1) limestone
(2) chalk
(3) marble

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

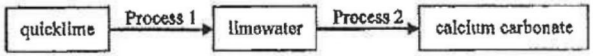
CE08_08

Nitrogen, instead of air, is used to fill the packets of potato chips. It is because

A. air supports combustion but nitrogen does not.
B. the density of air is higher than that of nitrogen.
C. argon in air contaminates the chips but nitrogen does not.
D. oxygen in air makes the chips go bad but nitrogen does not.

CE08_42

Calcium carbonate can be obtained from quicklime through two processes as shown below.



Which of the following combinations is correct?

	Process 1	Process 2
A.	adding water	adding Na_2CO_3(aq)
B.	adding Na_2CO_3(aq)	adding water
C.	adding water	heating
D.	heating	adding water

CE11_28

1st statement	2nd statement
Unpolluted rainwater can erode limestone.	Carbon dioxide in air dissolves in unpolluted rainwater to form carbonic acid.

CE11_40

An anhydrous compound Y gives a brick-red flame in flame test. Upon strong heating, Y gives out a gaseous mixture which turns blue cobalt(II) chloride paper pink and limewater milky. Which of the following compounds may Y be?

A. Na_2CO_3
B. $NaHCO_3$
C. $CaCO_3$
D. $Ca(HCO_3)_2$

DSE11SP_03

Which of the following correctly describes the sequence of procedures to separate sand, salt and water from a mixture of sand and salt solution?

A. Filtration, evaporation
B. Filtration, distillation
C. Crystallization, filtration
D. Crystallization, filtration, distillation

DSE13_19

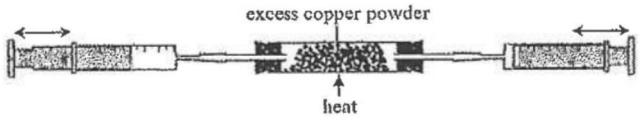
Which of the following statements about limestone is/are correct?

(1) It gives a golden yellow flame in a flame test.
(2) It gives a colorless gas when heated strongly.
(3) It dissolves in dilute sulphuric acid to give a clear solution.

A. (1) only
B. (2) only
C. (1) and (3) only
D. (2) and (3) only

DSE14_19

The set-up of an experiment is shown below. At room temperature, the system initially contains 40 cm^3 of $N_2(g)$, 25 cm^3 of $O_2(g)$ and 10 cm^3 of He(g).



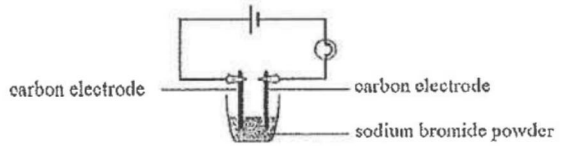
The plungers of the gas syringes are moved to and fro until there is no further change in the system. The system is then allowed to cool to room temperature. Which of the following statements concerning the experiment are correct?

(1) Some copper powder would change to a black substance.
(2) The total volume of the gases in the system would decrease by 25 cm^3.
(3) The same change in total volume of the gases would be observed if excess copper powder is replaced with excess iron powder.

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

DSE14_20

The diagram below shows the set-up of an experiment:



Which of the following methods may light up the light bulb?

(1) heating the sodium bromide powder until molten
(2) adding deionized water to the sodium bromide powder
(3) replacing the sodium bromide powder with bromine liquid

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

DSE15_02

Which of the following processes would NOT give oxygen?

A. Heating mercury(II) oxide strongly
B. Electrolysis of dilute sulphuric acid
C. Fractional distillation of liquefied air
D. Passing steam over heated magnesium

DSE15_23

Which of the following can distinguish a sample of limestone powder from a sample of table salt?

(1) adding water
(2) performing a flame test
(3) adding dilute hydrochloric acid

A. (1) and (2) only
B. (1) and (3) only
C. (2) and (3) only
D. (1), (2) and (3)

DSE16_01

A flame test conducted for a sample gives a brick-red flame. The sample may contain

A. chalks.
B. quartz.
C. graphite.
D. rock salts.

DSE17_14

Which of the following statements concerning oxygen gas is correct?

A. Oxygen gas relights a glowing splint.
B. Oxygen gas turns moist pH paper red.
C. Oxygen gas turns moist pH paper blue.
D. Oxygen gas gives a 'pop' sound when tested with a burning splint.

DSE18_01

Which of the following processes is most suitable for extracting sodium chloride from sea water?

A. Electrolysis
B. Crystallization
C. Simple distillation
D. Fractional distillation

DSE18_19

In an experiment, marble is heated in a boiling tube and the gas evolved is passed into a test tube with limewater. Which of the following statements concerning the experiment is/are correct?

(1) The marble turns brick red upon heating.
(2) The limewater turns milky initially but eventually becomes a colorless solution.
(3) If marble is replaced by chalk, a similar observation would be obtained.

A. (1) only
B. (2) only
C. (1) and (3) only
D. (2) and (3) only

Marking Scheme

MCQ

CE94_44	D	CE99_01	B	CE99_45	B	CE04_11	C (60%)
CE04_29	C (67%)	CE05SP_02	A	CE05SP_18	D	CE05_05	D (87%)
CE05_19	B (52%)	CE06_25	D (80%)	CE08_08	D (88%)	CE08_42	A (75%)
CE11_28	A (34%)	CE11_40	D (68%)	DSE11SP_03	B	DSE13_19	B (65%)
DSE14_19	D (38%)	DSE14_20	A (63%)	DSE15_02	D (77%)	DSE15_23	D (53%)
DSE16_01	A (81%)	DSE17_14	A (97%)	DSE18_01	B (56%)	DSE18_19	D (68%)