IGCSE Cambridge Topical Past Papers

# CHEMISTRY

0620 Paper 1

2020 — 2024

**1** – (0620/11_Summer_2020_Q1) – *States Of Matter*

Nitrogen is heated in a balloon, which expands slightly.

Which statements about the molecules of nitrogen are correct?

1 They move further apart.

2 They move more quickly.

3 They remain the same distance apart.

4 Their speed remains unchanged.

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

**2** – (0620/11_Summer_2020_Q2) – *States Of Matter*

Which piece of apparatus should be used to measure exactly 21.4 $cm^3$ of water?

**A** 25 $cm^3$ beaker

**B** 25 $cm^3$ pipette

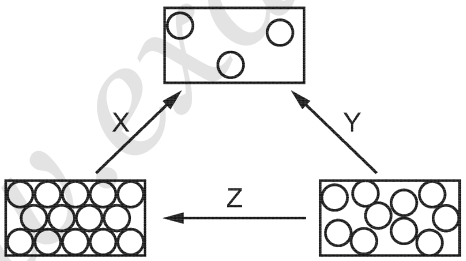
**C** 50 $cm^3$ burette

**D** 50 $cm^3$ measuring cylinder

**3** – (0620/12_Summer_2020_Q1) – *States Of Matter*

Each rectangle shows the arrangement of particles in each of the three states of matter.

X, Y and Z represent the processes needed to change from one state to another.

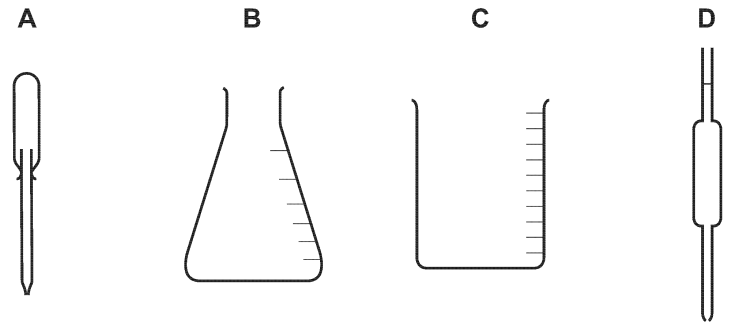



What are the processes X, Y and Z?

| | X | Y | Z |
|---|---|---|---|
| **A** | evaporating | subliming | condensing |
| **B** | evaporating | subliming | freezing |
| **C** | subliming | evaporating | condensing |
| **D** | subliming | evaporating | freezing |

**4** – (0620/12_Summer_2020_Q2) – *States Of Matter*

Which piece of apparatus is used to measure 25.0 $cm^3$ of aqueous sodium hydroxide?




**5** – (0620/13_Summer_2020_Q1) – *States Of Matter*

Descriptions of the three states of matter are shown.

| | particle separation | particle arrangement | type of motion |
|---|---|---|---|
| 1 | small | random | move past each other at low speed |
| 2 | large | random | rapid motion in straight lines |
| 3 | small | regular | vibration |

Which row is correct?

| | 1 | 2 | 3 |
|---|---|---|---|
| **A** | gas | liquid | solid |
| **B** | liquid | solid | gas |
| **C** | liquid | gas | solid |
| **D** | solid | gas | liquid |

**6** – (0620/13_Summer_2020_Q2) – *States Of Matter*

Which piece of apparatus is used to measure 13.7 $cm^3$ of dilute hydrochloric acid?

**A** balance

**B** burette

**C** conical flask

**D** pipette

**7** - (0620/11_Winter_2020_Q1) - *States Of Matter*

'The movement of a substance **very slowly** from an area of high concentration to an area of low concentration.'

Which process is being described?

**A** a liquid being frozen

**B** a solid melting

**C** a substance diffusing through a liquid

**D** a substance diffusing through the air

**8** - (0620/11_Winter_2020_Q2) - *States Of Matter*

What happens to the average speed of gas particles when pressure and temperature are increased?

| | average speed of particles | |
|---|---|---|
| | pressure increases | temperature increases |
| **A** | faster | faster |
| **B** | unchanged | slower |
| **C** | slower | faster |
| **D** | unchanged | faster |

**9** - (0620/11_Winter_2020_Q3) - *States Of Matter*

Which piece of apparatus can only measure a single fixed volume?

**A** 250 $cm^3$ beaker

**B** 50 $cm^3$ burette

**C** 100 $cm^3$ measuring cylinder

**D** 25 $cm^3$ pipette

**10** - (0620/12_Winter_2020_Q2) - *States Of Matter*

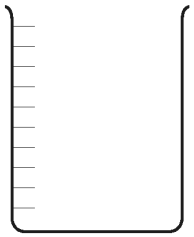
Oxygen melts at –219 °C and boils at –183 °C.

At which temperature is oxygen a liquid?

**A** –225 °C **B** –189 °C **C** –175 °C **D** 25 °C

**11** – (0620/12_Winter_2020_Q3) – *States Of Matter*

Which diagram shows a burette?

A 

B 

C 

D 

**12** – (0620/13_Winter_2020_Q2) – *States Of Matter*

When a dark grey solid element is heated, it changes directly into a purple gas.

Which word describes this change?

**A** boiling

**B** evaporation

**C** melting

**D** sublimation

**13** – (0620/11_Summer_2021_Q1) – *States Of Matter*

Which row describes the arrangement and movement of particles in a liquid?

| | arrangement of particles | movement of particles |
|---|---|---|
| **A** | touching and regular | vibrating |
| **B** | touching and random | moving around each other |
| **C** | touching and regular | moving around each other |
| **D** | touching and random | moving very fast |

# ANSWERS

**1** – (0620/11_Summer_2020_Q1) – *States Of Matter*

A

**2** – (0620/11_Summer_2020_Q2) – *States Of Matter*

C

**3** – (0620/12_Summer_2020_Q1) – *States Of Matter*

D

**4** – (0620/12_Summer_2020_Q2) – *States Of Matter*

D

**5** – (0620/13_Summer_2020_Q1) – *States Of Matter*

C

**6** – (0620/13_Summer_2020_Q2) – *States Of Matter*

B

**7** – (0620/11_Winter_2020_Q1) – *States Of Matter*

C

**8** – (0620/11_Winter_2020_Q2) – *States Of Matter*

D

**9** – (0620/11_Winter_2020_Q3) – *States Of Matter*

D

**10** – (0620/12_Winter_2020_Q2) – *States Of Matter*

B