



# Chemical Analysis

## Multiple Choice Questions

### Set 3

You may use a periodic table to help you answer these questions.

Tick **one** box.

A student carried out tests on three samples of unknown gases, P, Q and R. Their observations are shown in **Table 1**.

**Table 1**

Gas Sample	Test with Damp Litmus Paper	Test with Limewater	Test with Glowing Splint	Test with Burning Splint
P	the litmus paper turns white	no change	no change	no change
Q	no change	no change	the splint relights	no change
R	no change	the limewater turns milky	no change	no change

1. Which gas was present in sample P?

- A. hydrogen ☐
- B. oxygen ☐
- C. carbon dioxide ☐
- D. chlorine ☐

2. Which gas was present in sample Q?

- A. hydrogen ☐
- B. oxygen ☐
- C. carbon dioxide ☐
- D. chlorine ☐

3. Which gas was present in sample R?

- A. hydrogen ☐
- B. oxygen ☐
- C. carbon dioxide ☐
- D. chlorine ☐

**Table 2** shows the melting points of some substances.

**Table 2**

Substance	Melting Point (°C)
A	1375 – 1530
B	1084
C	1770
D	420

4. Which substance in **Table 2** is an alloy?

- A. A ☐
- B. B ☐
- C. C ☐
- D. D ☐

5. Which word describes a mixture that has been designed as a useful product?

- A. allotrope ☐
- B. compound ☐
- C. element ☐
- D. formulation ☐

6. What is meant by a 'pure' substance in everyday language?

- A. a clean substance ☐
- B. a substance with nothing added to it ☐
- C. a substance containing many elements or compounds ☐
- D. a substance that is safe to use ☐

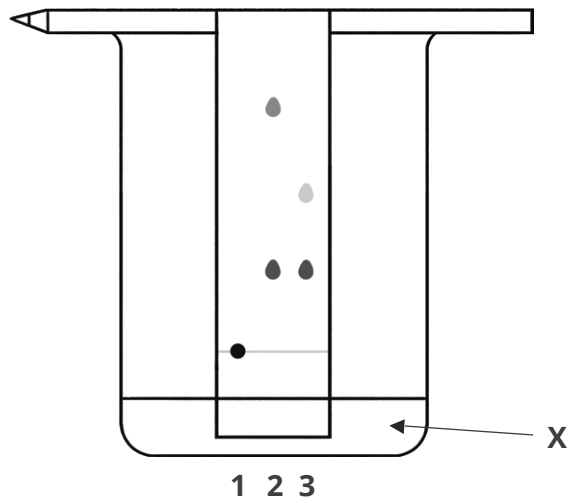
Fertilisers are specially designed to provide plants with the correct combination of nutrients for optimal growth.

7. Which statement about fertilisers is **not** correct?

- A. they are formulations ☐
- B. they are mixtures ☐
- C. they are pure ☐
- D. they help plants to grow ☐

A student separated three dyes using chromatography. **Figure 1** shows the apparatus used in their investigation.

**Figure 1**



8. In **Figure 1**, what does part X represent?

- A. the baseline ☐
- B. the mobile phase ☐
- C. the solvent front ☐
- D. the stationary phase ☐

9. In **Figure 1**, which dye contains the substance with the largest  $R_f$  value?

- A. 1 ☐
- B. 2 ☐
- C. 3 ☐
- D. it is not possible to know from **Figure 1** alone ☐

10. Which conclusion can be made from the chromatogram in **Figure 1**?

- A. all three dyes are soluble in the solvent which was used ☐
- B. dye 1 is a mixture ☐
- C. dyes 2 and 3 have one substance in common ☐
- D. dyes 2 and 3 are the same ☐