



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

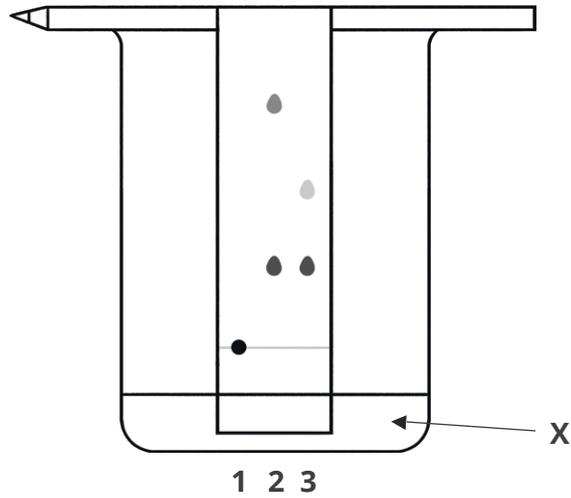
Fertilisers are specially designed to provide plants with the correct combination of nutrients for optimal growth.

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