Chemical Analysis
Multiple Choice Questions
Set 1

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

Tick **one** box.

1. In chemistry, what is meant by the term 'pure substance'?

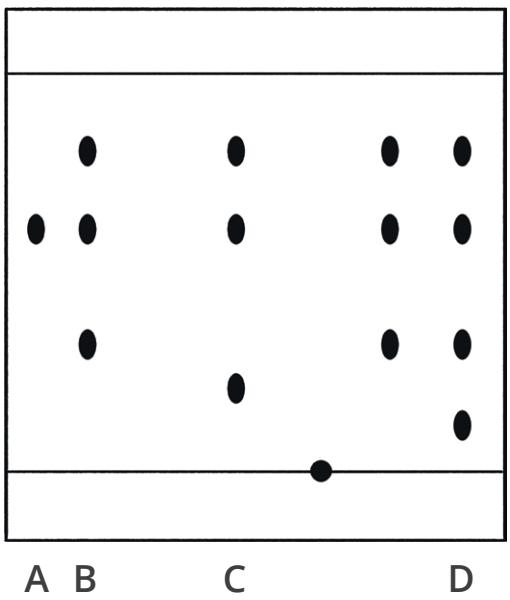
   A. a clean, unpolluted substance ☐
   B. a mixture containing elements only ☐
   C. a natural substance that has had nothing added to it ☐
   D. a single element or compound not mixed with any other substance ☐

2. Which of these is **not** an example of a formulation?

   A. air ☐
   B. fertiliser ☐
   C. medicine ☐
   D. paint ☐

Figure 1 shows a chromatogram.

Figure 1



3. Which substance in the chromatogram in **Figure 1** is a pure substance?

   A. A ☐
   B. B ☐
   C. C ☐
   D. D ☐

4. When a burning splint is placed at the open end of a test tube filled with a sample of an unknown gas, a squeaky pop sound is observed. Which gas did the test tube contain?

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

5. Which statement about carbon dioxide is correct?

   A. it can be identified by its green colour ☐
   B. it can relight a glowing splint ☐
   C. it is a toxic gas ☐
   D. it turns limewater milky (cloudy) ☐

6. Which word can be used to describe shampoo?

   A. alloy ☐
   B. formulation ☐
   C. metallic ☐
   D. pure ☐

7. A sample of water is heated and begins to boil at 92°C. Its temperature continues to rise while it is boiling. Which of the following is true about this sample of water?

   A. it has a high melting point ☐
   B. it is a formulation ☐
   C. it is not pure ☐
   D. it is distilled water ☐

8. What is used to test for the presence of chlorine gas?

   A. a flame test ☐
   B. a glowing splint ☐
   C. damp litmus paper ☐
   D. limewater ☐

Table 1 shows melting point and boiling point data for substances A, B, C and D.

Table 1

Substance	Melting Point (°C)	Boiling Point (°C)
A	0	100
B	98	883
C	-40	304 – 574
D	-210	-196

9. Which substance is a mixture?

A. A ☐
B. B ☐
C. C ☐
D. D ☐

10. In chromatography, how can the R_f value of a substance be calculated?

A. distance moved by solvent × distance moved by substance ☐
B. distance moved by solvent ÷ distance moved by substance ☐
C. distance moved by substance × distance moved by solvent ☐
D. distance moved by substance ÷ distance moved by solvent ☐