

## Questions

Q1.

A student wants to find out if the green colouring in grass is a mixture of dyes.

He uses a solvent to dissolve the green colouring from some grass.

He then separates the solution of the green colouring from the remaining grass.

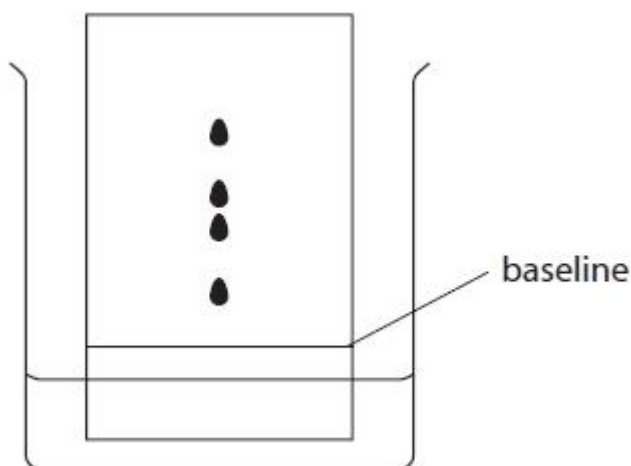
(a) Which of these methods is used to separate the solution of the green colouring from the remaining grass?

(1)

- A boiling
- B condensation
- C evaporation
- D filtration

(b) The student uses a dropping pipette to place a drop of the green solution onto a piece of chromatography paper and produces a chromatogram.

The diagram shows his results.



(i) Add three more labels to the diagram to show

- the solvent
- the chromatography paper
- the original position of the spot of the green solution

(3)

(ii) Explain how many different dyes are present in the green colouring.

(1)

.....

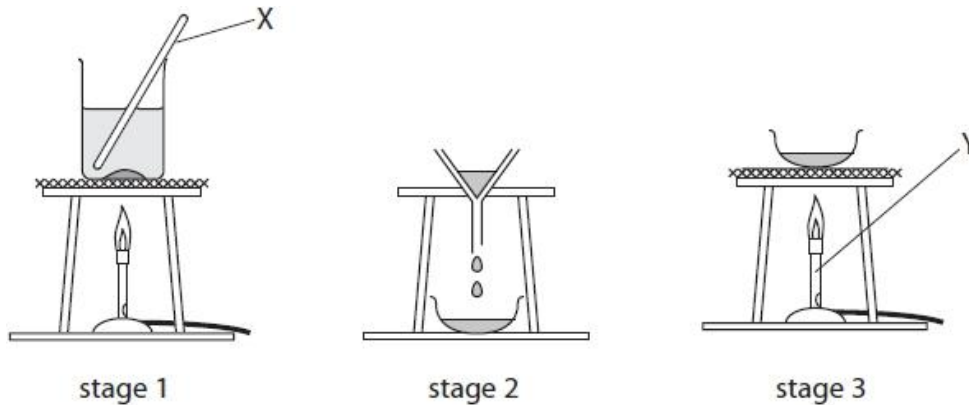
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(Total for question = 5 marks)

Q2.

The diagram shows the apparatus a student uses to separate a mixture of salt and sand. She adds the mixture to water in a beaker and then carries out the three stages shown.



(a) Give the names of the pieces of apparatus labelled X and Y.

(2)

X .....

Y .....

(b) (i) A liquid that dissolves substances is a

(1)

- A solute
- B solution
- C solvent
- D suspension

(ii) The clear liquid that forms in stage 1 is a

(1)

- A solute
- B solution
- C solvent
- D suspension

(c) (i) At which stage, 1, 2 or 3, is the sand collected?

(1)

.....

(ii) At which stage, 1, 2 or 3, is the salt collected?

(1)

.....

(d) What happens to the water in stage 3?

(1)

.....

**(Total for question = 7 marks)**

**Q3.**




A student was asked to find the mass of salt dissolved in 100 cm<sup>3</sup> of sea water. She was given the following instructions.

- Step **A** Weigh an empty evaporating basin
- Step **B** Transfer 50 cm<sup>3</sup> of sea water into the basin
- Step **C** Heat the sea water in the basin until all the water has evaporated
- Step **D** Allow the basin and residue to cool
- Step **E** Weigh the basin and residue of salt

(a) During the experiment, the student used several pieces of apparatus. Some of them are shown in the table.

Complete the table.

(6)

Image of apparatus	Name of apparatus	One step in which the apparatus was used
	evaporating basin	C
	.....	.....
.....	tripod	.....
	.....	.....

(b) State, with a reason, **one** safety precaution that the student should take when doing this experiment.

(2)

Precaution

Reason

.....

.....  
.....  
.....

(c) The student obtained the following results.

mass of basin and salt (step **E**) = 81.50 g

mass of empty basin (step **A**) = 78.60 g

Calculate the mass of salt dissolved in **100 cm<sup>3</sup>** of sea water.

(1)

Mass of salt = ..... g

**(Total for Question = 9 marks)**