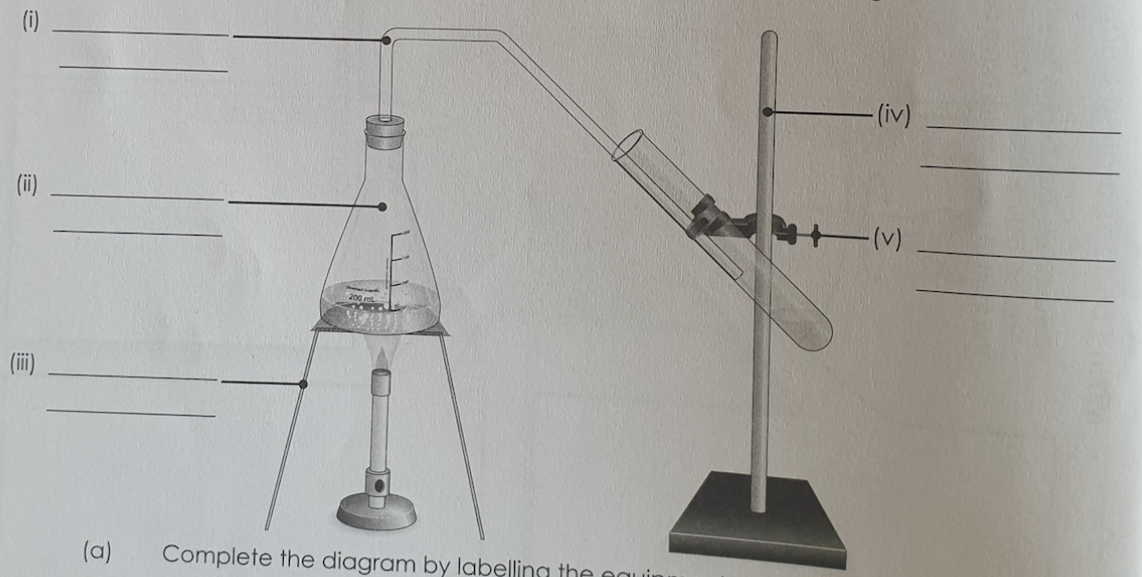
End of Chapter Review

1. Mix and match the terms and definitions.

Solute	• Liquid that has passed through a filtering system.
Solvent	• The substance being dissolved in a solvent.
Filtrate	• A small amount of solute in a large amount of solvent.
Dilute	• A liquid that dissolves a solute.
Evaporation	• When a liquid turns into a gas.
Chromatography	• A large amount of solute in a small amount of solvent.
Filtration	• Two or more substances together but not chemically combined.
Concentrated	• Technique used to separate two or more coloured liquids.
Mixture	• Technique used to separate a solid mixed with a liquid.

2. The apparatus shown below can be used to separate a mixture of sugar and water.



(a) Complete the diagram by labelling the equipment.

(b) What is the name of this separation technique? _____

(c) Using the words *evaporate* and *condense*, briefly explain how the technique works.

_____

_____

_____

(d) Methanol has a boiling point of approximately 60°C, while water boils at approximately 100°C. If a mixture of alcohol and water was placed into the apparatus above, state which liquid would end up in the boiling tube first.

_____

3. As part of your job for Silverback Scientific Industries, you are trying to develop a new stain-removal liquid that is good at removing grass stains. The table below shows the results of your investigation.

Solvent	Grass stain	Fabric
A	Soluble	Soluble
B	Insoluble	Soluble
C	Soluble	Insoluble
D	Insoluble	Insoluble
E	Soluble	Soluble

(a) Describe the effect on both the stain and the fabric if we decided to use:

(i) Solvent A: _____

_____

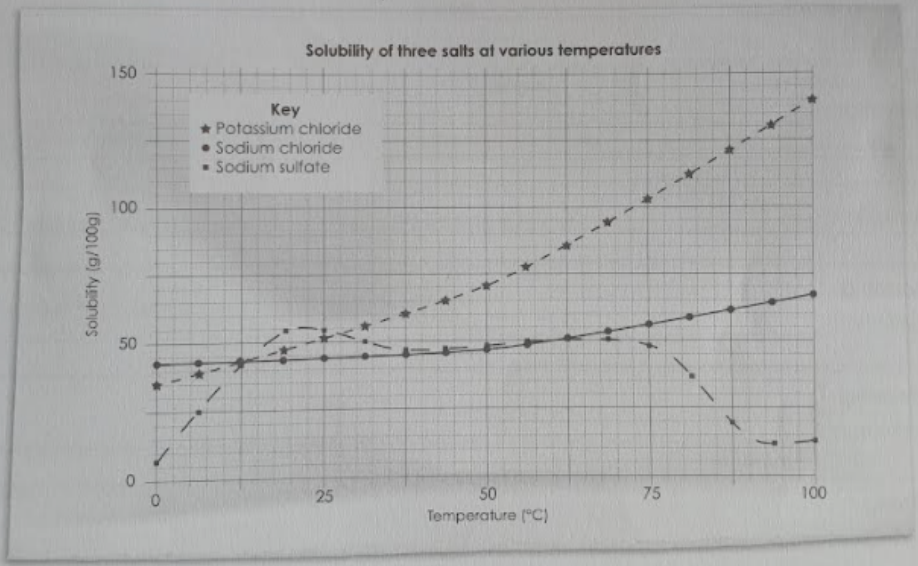
(ii) Solvent B: _____

_____

(iii) Solvent C: _____

_____

4. The graph below shows the solubility of three salts at various temperatures.



Which salt is the *most* soluble at:

(a) 0°C? _____

(b) 25°C? _____

(c) 100°C? _____

5. Use the word list to complete the paragraph.

concentrated - dilute - particles - solute

A _____ solution contains a small amount of solute. When more _____ is added to the solution, it will become more _____. A _____ solution contains more solute _____ when compared to a dilute solution.

End of Chapter Review Questions

1. Mix and match the terms and definitions.

Solute	Liquid that has passed through a filtering system.
Solvent	The substance being dissolved in a solvent.
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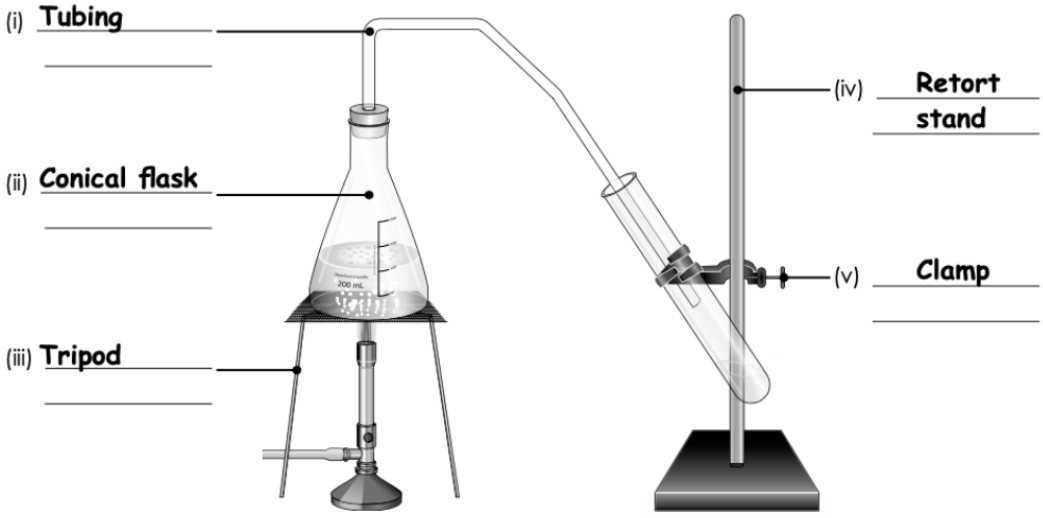
2. The apparatus shown below can be used to separate a mixture of sugar and water.



(a) Complete the diagram by labelling the equipment.

(b) What is the name of this separation technique? **Distillation.**

(c) Using the words *evaporate* and *condense*, briefly explain how the technique works.

The mixture is heated in the conical flask. The solvent will evaporate leaving the solute behind. The solvent will then condense back into a liquid as it cools inside the boiling tube.

(d) Methanol has a boiling point of approximately 60°C, while water boils at approximately 100°C. If a mixture of alcohol and water was placed into the apparatus above, state which liquid would end up in the boiling tube first.

The methanol would end up in the boiling tube first.

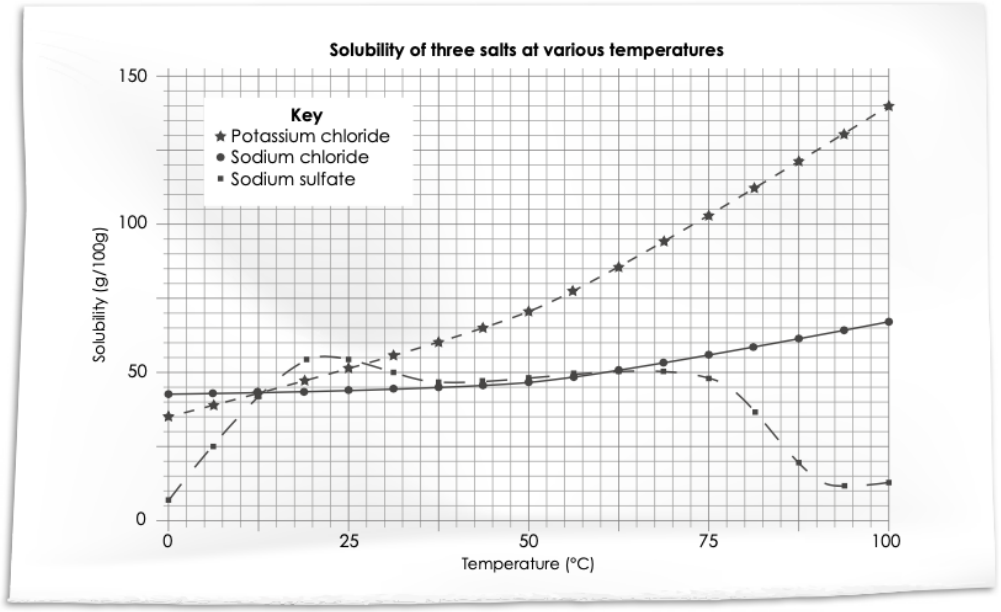
(a) Describe the effect on both the stain and the fabric if we decided to use:

(i) Solvent A: **Solvent A would dissolve both the fabric and the stain.**

(ii) Solvent B: **Solvent B would dissolve the fabric but not the stain.**

(iii) Solvent C: **Solvent C would dissolve the stain and not the fabric.**

4. The graph below shows the solubility of three salts at various temperatures.



Which salt is the *most* soluble at:

(a) 0°C? **Sodium chloride.**

(b) 25°C? **Sodium sulfate.**

(c) 100°C? **Potassium chloride.**

5. Use the word list to complete the paragraph.

concentrated - dilute - particles - solute

A **dilute** solution contains a small amount of solute. When more **solute** is added to the solution, it will become more **concentrated.** A **concentrated** solution contains more solute **particles** when compared to a dilute solution.