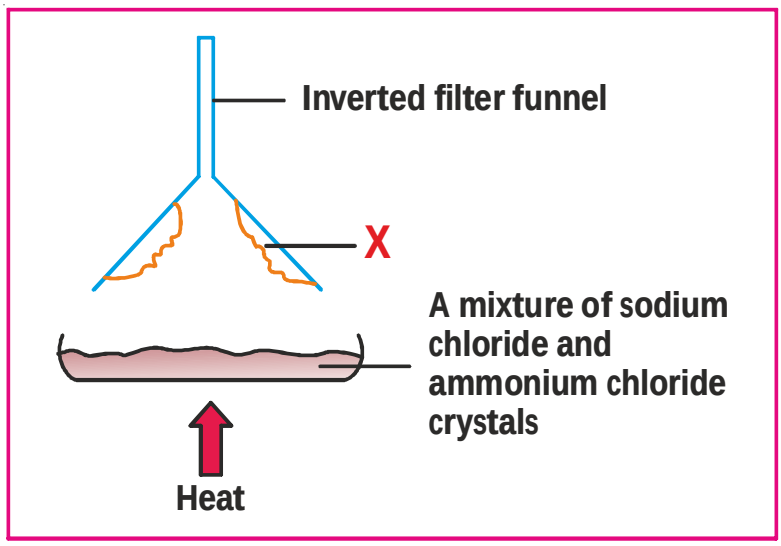
01 **The diagram given below shows a process of separating a mixture of two solids.**



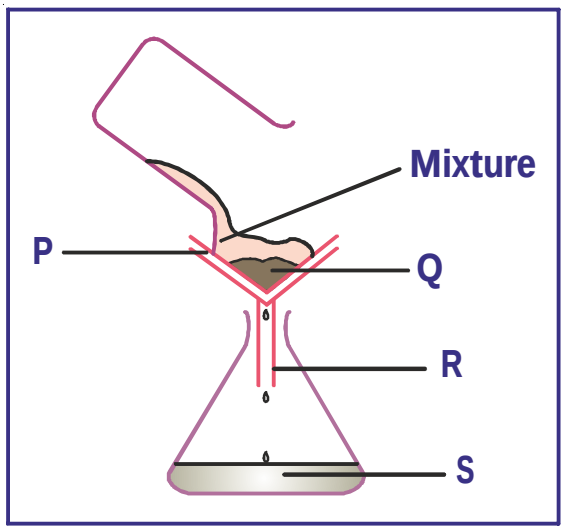
During heating, ammonium chloride crystals turn into vapour. The vapour condenses and crystallises on the cool surface of the inverted filter funnel.

(i) Identify crystals X.

(ii) Name two other substances which can be separated by this method.

Your solution here:

02 **Diagram I given below shows a method of purification.**



(a) **What type of mixture is separated by this technique ?**

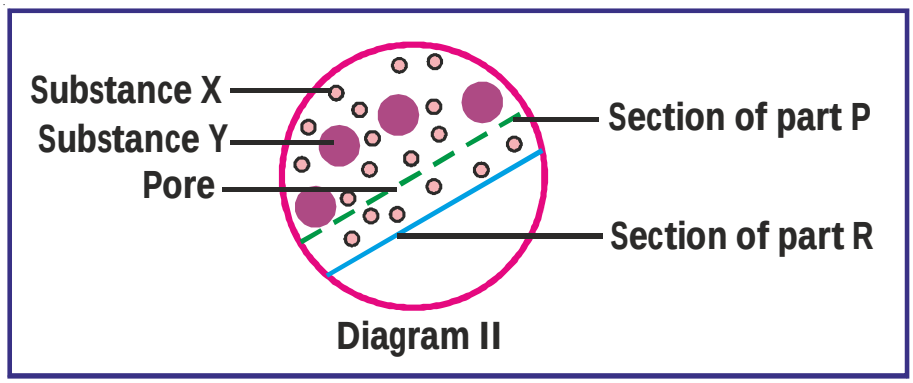
(b) **Name labelled parts P to S.**

(c) **If the mixture contains tea grains and sugar solution, what would be present in**

(i) **part Q:**

(ii) **part S:**

(d) **Diagram II given below shows an enlarged view of a section from Diagram I.**



Based on Diagram II, explain how this technique is able to separate a mixture containing substances X and Y.

Your solution here:

03 **Identify the appropriate keywords in the following description.**

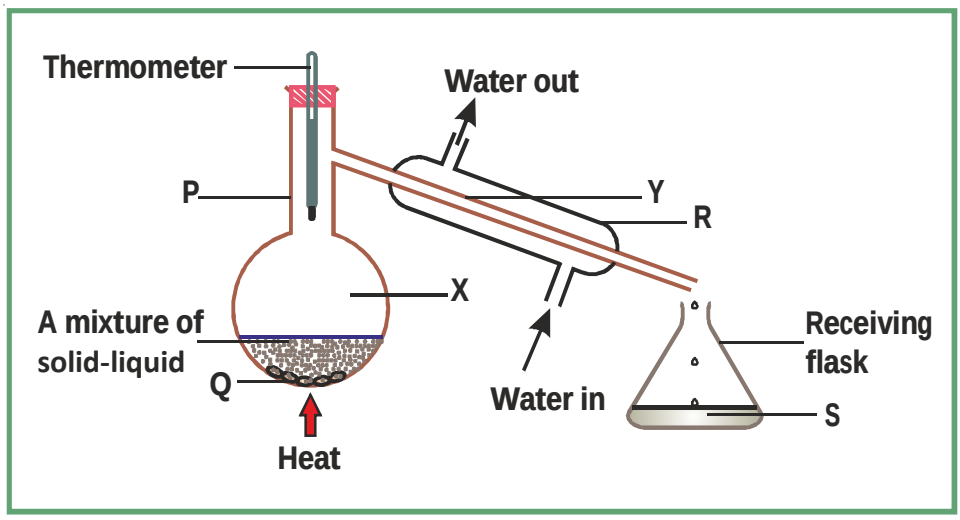
(a) **Evaporation to dryness and crystallisation are used to obtain (soluble/insoluble) solid from a solution. If the solid is (heat-stable/not heat-stable), the solvent is evaporated completely on strong heating. If the solid is (heat-stable/not heat-stable), the solvent is evaporated to saturation.**

(b) **Give an example of a solid which can be recovered by evaporation to dryness.**

(c) **It is not advisable to evaporate the sugar solution to dryness to obtain sugar crystals. Explain why it is so.**

Your solution here:

04 **The diagram given below shows a simple distillation.**



(a) **Name the labelled parts P, Q, R and S.**

(b) **Describe the physical changes taking place in X & Y.**

(c) **What is the function of substance Q in this technique ?**

(d) **(i)** **State one mistake in the experimental setup.**

(ii) **How would this mistake affect the experimental result ?**

(e) **Explain why the following precautions are taken for this separation technique.**

(i) **The conical flask is used as a receiving flask instead of a beaker.**

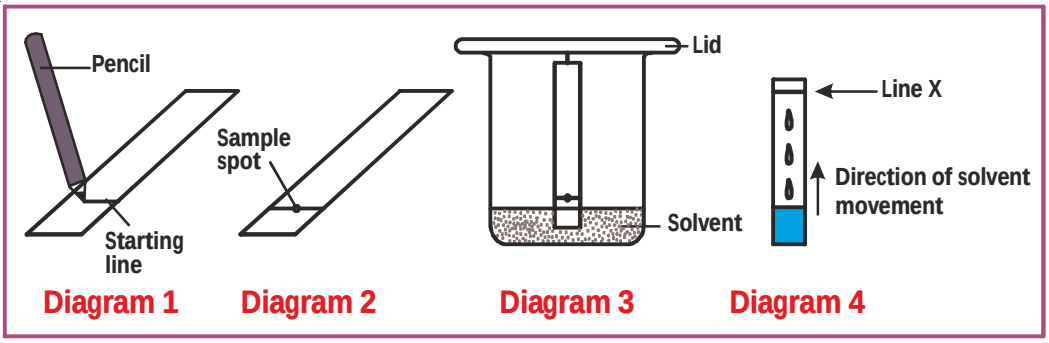
(ii) **The flow of water in apparatus R is against the flow of vapour.**

(f) **(i)** **This setup is not suitable for separating a volatile liquid. Explain why it is so.**

(ii) **How would this technique be modified to distillate this type of liquid ?**

Your solution here:

05 **Read the separation technique shown below.**



(a) (i) Name the type of separation technique.

(ii) State three uses of this technique.

(b) Describe how this technique is able to separate different substances in a mixture.

(c) Name the following.

(i) The results of the separated components on a chromatography paper.

(ii) Line X

(d) State the reason for each of the following actions.

(i) A pencil is used instead of a pen to draw the starting line as shown in Diagram 1.

(ii) A very small amount of sample is placed on the starting line as shown in Diagram 2.

(iii) The container is covered with a lid as shown in Diagram 3.

(iv) The starting line must be above the solvent as shown in Diagram 3.

(v) Line X should be near the top of the paper as shown in Diagram 4.

(e) State three advantages of this technique.

Your solution here: