Rosary School – Marj Elhamam

Worksheet 2

Name: _____ Date: / 11/ 2025

Grade: 6 (A,B,C,D,E)

Question 1:

The solubility of blue Copper Sulfate is 32g per 100g of water at 20°C.

A. Which has the higher solubility in water, Copper Sulfate or Sodium Chloride?

The solubility of Sodium Chloride (salt) is 36g per 100g at 20 °C. So sodium Chloride has a higher solubility

B. State the largest mass of Copper Sulfate that would dissolve in 600g of water at 20°C

100 → 32 32 x 6 = 192g of Copper Sulfate will dissolve in 600g of water at 20°C

600 → ?

C. A saturated solution of Copper Sulfate at 20°C is cooled to 5 °C. Describe what you see when the solution cools. Explain your answer.

As the liquid cools, the copper Sulfate will start to crystalise out. This is because the solubility of the Copper Sulfate decreases and so less of it can stay dissolved in the solvent.

D. Explain what would happen if you add 25g of copper sulfate to 50g of water at 20°C.

32g → 100g 32÷2 = 16g

? → 50g

Only 16g of Copper Sulfate will dissolve and (25 – 16 = 9g) will crystalise out, as 25g is higher than the solubility in 50g of water at this temperature.

Question 2:

a. 50g of Sugar is stirred into 160g of ethanol. What is the mass of the solution formed?

Mass of solution = mass of solute + mass of solvent

= 50 + 160

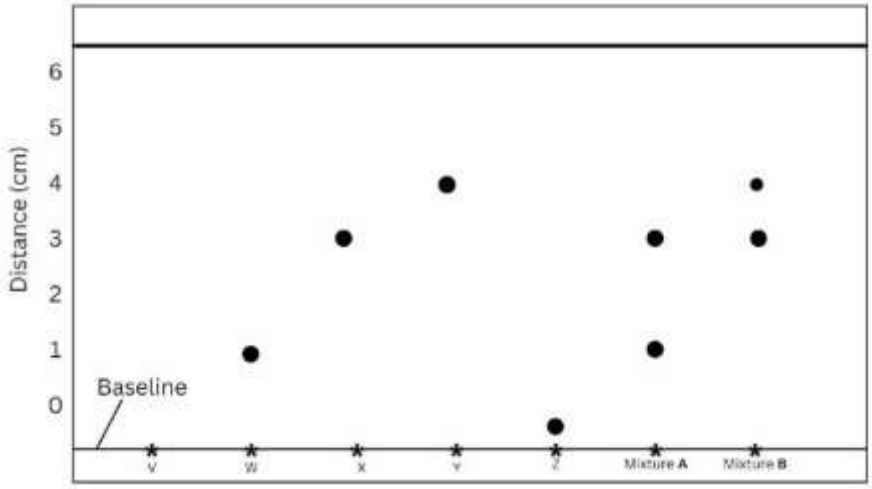
= 210g

b. Explain your answer to part a.

Mass is conserved; mass is not created, mass is not lost, it only changes form

Question 3:

The following chromatogram was obtained in an experiment to analyze two mixtures, A and B. Use it to answer the questions below:



a. How many components were in each mixture?

Mixture A 2 Mixture B 2

b. Which pure substance was:

. Least soluble: Z Most soluble: Y

c. Which pure substances were in the mixture:

A: W and X

B: X and Y

d. Which component was present in both mixtures? X

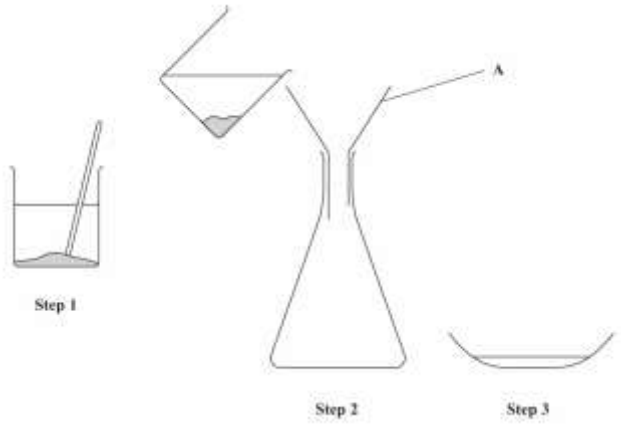
e. Which pure substance is not found in either mixture? Z

2. If you mark the starting line, how will you make sure it won't disappear? Explain your answer

We draw it using a pencil, because pencil doesn't dissolve in the solvent, it's insoluble

Question 4:

Salt is soluble in water, but sand is insoluble in water. This difference allows a mixture of salt and sand to be separated using this apparatus.



(a) Use words from the box to complete the sentences. Each word may be used once, more than once or not at all.

beaker	Bunsen burner	conical flask	funnel
glass rod	thermometer	water	

In **Step 1**, the mixture of salt and sand is placed in a beaker containing water and stirred with a glass rod

In **Step 2**, the mixture from **Step 1** is poured through a funnel into a conical flask

In **Step 3**, the liquid is transferred to a basin to allow the water to be removed.

(b) (i) What should be placed in **A** before the mixture from **Step 1** is poured through it?

Filter paper

(ii) What is the solid removed in **Step 2**?

Sand

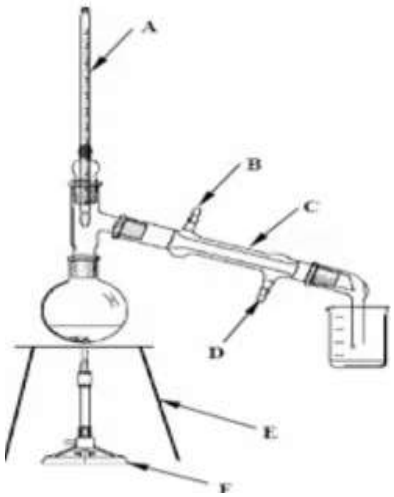
(c) Name the methods used in this separation.

Filtration the evaporation

Question 5:

The apparatus below can be used to distil a mixture of ethanol and water.

The water and ethanol mixture was placed in the round-bottomed flask and heated gently. The temperature of the mixture was carefully monitored.



(a) Why are anti-bumping granules needed to carry out a distillation experiment?

To prevent violent boiling which could blow the bung out

(b) What enters at D and leaves at B?

Cold water

(c) Name the piece of apparatus labelled C in the diagram.

Liebig condenser

(d) Name the liquid that forms first in the beaker.

Pure or distilled water, distillate

Teachers: Linda Barakat and Saja Ammari