

CBSE SOLVED TEST PAPER-01

CLASS - IX Science (Is matter around us pure)

Q. What is distillation?

Ans: Distillation is a method of separating mixtures based on differences in their boiling points. The compound which have higher boiling point will distillate later while the compound which have lowest boiling point will distillate out first.

Q. How is blood a heterogeneous substance?

Ans: Blood is a heterogeneous mixture because it a mixture of plasma, blood cells, glucose, proteins, mineral ions, hormones and many different salts dissolved in it. Thus the dispersed phase and dispersed medium are in different physical state and hence a heterogeneous mixture

Q. Calculate the mass of sodium sulphate required to prepare its 20% (mass percent) solution in 100g of water?

Ans: Mass % of Sodium sulphate in the solution = 20%

If the total mass of the solution = 100g Then mass of sodium sulphate = $(20/100) \times 100 = 20$ g

Mass of water = $100 - 20 = 80$ g.

Q. Arun has prepared 0.01% (by mass) solution of sodium chloride in water, calculate the composition of solution. How do you do it ?

Ans: Mass % of solute = 0.01 % of NaCl in water

Mass % of solute = $[\text{Mass of solute in grams} / \text{Mass of solution in grams}] \times 100$.

Let us suppose that mass of the solution is 100 g.

Therefore mass of NaCl = 0.01 g

Mass of water = $100 - 0.01 = 99.99$ g.

Q. How to separate components from mixture containing sulphur, charcol , pottasium nitrate?

Ans: The mixture containing sulphur, charcoal and potassium nitrate can be separated by following technique:

- Add water to the mixture. Potassium nitrate will dissolve in water. Filter the solution.
- Filterate is solution of potassium nitrate and residue contains sulphur and charcoal.
- Evaporate the filterate, water will vapourize leaving behind potassium nitrate.
- To the residue containing sulphur and charcoal add carbon disulphide, this will dissolve sulphur.
- Filter this solution.

F. The filtrate will contain sulphur dissolved in carbon disulphide and residue will be charcoal.

G. Evaporate the filtrate, to obtain crystals of Sulphur.

Q. Acetone evaporates in normal room temp. Why do we have to heat it to its boiling point?

Ans: At room temperature the rate of evaporation of acetone is slow, to speed up the process to evaporate all the acetone in the mixture, we supply heat.

Q. why light can't pass through a solution?

Ans : The size of particles in the solution is very small and when light is incident on the solution, its particles are not able to deflect the path of light. Therefore, the path of light is not visible, when light passes through the solution.

Q. what is difference between solution and true solution?

Ans: Solution is a mixture of solute in solvent that is homogeneous or heterogeneous. A true solution is a homogeneous mixture in which the size of particles is very small and is not visible under a powerful microscope. A true solution does not scatter light. For example, solution of salt in water.

Q. How can a saturated solution be made unsaturated?

Ans: By adding more solvent to the solution. Or, by increasing the temperature.

Q. What volume of alcohol and what volume of water must be mixed together to prepare 250 mL of 60% volume by volume solution of alcohol in water ?

Ans: Amount of alcohol in 250ml = 60% of 250 mL = $(60 \times 250) / 100 = 150$ mL

Amount of water in 250ml = 250 mL - 150 mL = 100ml

Therefore 150 mL alcohol and 100 mL water should be mixed to, prepare 250 mL of 60% alcohol solution.