

01

100 ml of water at room temperature of 25 °C is taken in a beaker and a little of solid S is dissolved in it by stirring to obtain a solution X. More and more of solid S is added to the solution with constant stirring, while keeping the temperature of solution constant at 30 °C. After some time, it is observed that no more solid dissolves in water and at the same time some solid is also left undissolved at the bottom of the beaker, The contents of beaker are filtered through a filter paper to obtain solution Y in the form of a filtrate.

- (a) What name is given to solution X ?
- (b) What name is given to solution Y ?
- (c) What will you observe if the solution Y at 30 °C is cooled down to 10 °C by keeping the beaker in crushed ice ? Why ?
- (d) What term is used to represent the amount of solid dissolved in 100 grams of water in a solution like Y ?

Your solution here:

02

A mixture contains two solid constituents, common salt and chalk powder. Common salt is soluble in water whereas chalk powder is insoluble in water. So, this difference in their solubility will be used to separate them.

- (i) How will you separate common salt and chalk powder?
- (ii) By which process, chalk powder and salt solution are separated ?
- (iii) How will you obtain common salt crystals from salt solution ?

Your solution here:

03

A girl wantedly mixed rice, all pins, biscuits, pebbles and powdered sugar into a bowl in equal proportions and gave the mixture to her brother. She asked him to separate each component of the mixture without using water.

- (i) Which components of the above mixture can be separated by using our hand ?
- (ii) Which constituent of the mixture can be separated by using a magnet ?
- (iii) Two constituents rice and powdered sugar are yet to be separated. How are they separated ?

Your solution here:

04

A student has a mixture of three different substances P, Q and R as given below:

- I. P is heavy and non-magnetic.
- II. Q is magnetic and heavy.
- III. R is light and non-magnetic.

- (i) By which process P and Q are separated from R ?
- (ii) P and Q, both are heavy but P is non-magnetic and Q is magnetic. How both are separated ?
- (iii) By which process only R is separated from P and Q ?

Your solution here:

05 You are given a mixture of sand, water and mustard oil. How will you separate each component of this mixture ?

- (i) By which process sand is separated from water and mustard oil ? Explain.
- (ii) Both water and mustard oil are immiscible liquids. Explain the process of their separation.

Your solution here: