HW
a/II/2/

O.D.M Connect assignment

Pure substances and mixtures; separation of mixtures

Ex-II, objective type questions 1, 2

Ex-II

1) Define:

a) Filtration - A method of separation in which solid particles from liquid by allowing it to pass through a filter paper is called filtration.

b) Sublimation: The process in which a solid changes directly into it's vapours on heating is called sublimation.

c) Evaporation: It is the process of converting a liquid into it's vapours state either by exposing it to air or by heating.

d) Crystallisation: Evaporation of liquid from a homogeneous liquid-solid mixture and collecting solid in the form of crystals is called crystallisation.

e) Miscible liquids: Homogeneous liquid-liquid mixtures are called miscible liquids.

f) Immiscible liquids: Heterogeneous liquid-liquid mixtures are called immiscible liquids.

(2) Why do we need pure substances?

As we need pure substances because of the following reasons:

1) a pure substance has a fixed melting and fixed boiling point.
2) A pure substance has it's characteristic

taste, colour and odour.

3) Pure substances cannot be broken further into more simple substances by any physical means.

(3) Ans a) Iron and sulphur.
b) Sand and water, rice and water.
c) Sugar from it's solution in water

(4) Ans a) Filtration: Glass and sugar on dissolving in water and ~~filtratio~~ filtering, glass separates out as residue on the filter paper. Filtrate of sugar solution is heat to remove water by evaporation, sugar is collected as crystals.

b) Magnetic separation: With the help of a magnet, iron fillings can be separated leaving behind chalk powder.

c) Winnowing: It separates chaff (lighter) from heavier grains in two different heaps.

d) Evaporation: This method is used to separate the components of a homogeneous solid-liquid mixture, like salt from sea water. Sea water is collected in shallow beds and allowed to evaporate in the sun. When all the water is evaporated, salt is left behind.

e) Evaporation: Wheat and sugar are put in water in a beaker. Sugar dissolves and mixture is passed through strainer and separated and dried. Sugar is obtained by evaporating sugar solution.

f) Sublimation: Camphor sublimes on heating leaving behind sand.

g) Crystallisation: Pure sugar is obtained from it's solution in water by the process of crystallisation. At first the sugar solution is heated

to evaporate water at a faster speed. When very less of water is left the solution is cooled. On cooling sugar dissolved in it starts separating out in the form of crystals.

(5) Ans a) Camphor and Nephthalene
b) Sugar and salt (NaCl)
c) Sand and chalk powder.
d) i) filter paper, ii) A bead of sand, iii) Charcoal, iv) A piece of muslin cloth.

(6) Ans a) Because in hand picking method substances should be large enough in size to be recognized and picked out by hand but sand and saw dust particles are very small in size so they can't be picked by hand. It can be separated by filtration.

b) Mixtures of iron and sulphur can be separated by moving a magnet over them. Iron gets attached to the magnet is separated.

c) Water from a river, pond or lake contains very fine clay particles. To make them

settle at a faster rate, a chemical substance called alum in powdered form is added to such mixtures. It dissolves in water and forms clusters with clay and dust particles making them heavier and increasing the rate of sedimentation.

Objective type questions

(1) a) Ans The substances that make a mixture are called it's constituents or components.

b) Evaporation or crystallisation is a process to separate solids dissolved in liquids.

c) Ans heterogeneous (liquid in gas)

d) Ans loading and decantation

e) Ans decantation

f) Ans crystallisation

g) Ans Sublimation

h) Ans residue, filtrate

i) By decantation.
ii) By filtration

(2) a) ~~True~~ A pure substance consists of only one kind of atom or molecule.
True

b) Common salt is separated from it's solution in water by decantation. False
False: Common salt is separated from it's solution in water by evaporation.

c) Winnowing is a process to remove small stones from grains.
False: Coinnowing is a process to remove husk from grains.

d) Jewellery gold is a homogeneous mixture of metals.
False: Jewellery gold is a heterogeneous mixture of metals.

e) Air can be separated from water by filtration.
~~True~~ False: Air can be separated from water by heating.

f) Salt and air dissolved in water add taste to water.

A) True

g) Steel is an alloy of iron and aluminium.

A) False : Steel is an alloy of iron and carbon.