Complete the table :-

	Mixture	Method of seperation	Principle of seperation
1)	Salt from sea water Sugar from its solution	Evaporation	This method is used to seperate the components of a homogeneous solid - liquid mixture, in which only the solid is recovered, while the liquid escapes in the form of vapour
2)	Sugar from its solution	Crystallisation	In this method, hot solution containing more solute than it can hold at room temperature is slowly cooled. The solvent gets evaporated, while the solute starts seperating out

3)	Distilled water from Tap water	Distillation	This method too is used to seperate the component of a solid liquid mixture in which both solid and liquid are recovered.

Q1. Name the method to seperate the constituents of the following mixtures and also give their principal of seperation

① ~~Cream from~~ ~~milk~~

Mixture	Method	Principale of seperation
1) Ice Cream from milk	Centrifugation	This method is used to seperate the components of ~~to~~ liquid-liquid ~~hogeneous~~ homogeneous mixtures in which components have different density.
2) Water and Kerosene oil	~~Fractional~~ distillation By Seperating funel	This method is used to seperate the components of liquid liquid heterogeneous

			mixtures, in which liquids have different densities
3)	Water and ethyl alcohol	Fractional distillation	This process is used to seperate liquid liquid homogeneous mixture in which the liquid have different boiling points

Q2 Differentiate between miscible and immiscible liquid

ans.

Miscible liquids	Immiscible liquids
Liquids which dissolves in each other completely in all proportions.	Liquids th which do not dissolve in each other. are called as
Eg- Alcohol and water	Eg- oil and water.

Q3 a) What is ~~Chromato~~ chromatography ? & Tear which type of mixture it is it used?

ans. The process of seperating different dissolved constituents of a mixture by their adsorption on an appropriate material is called chromatography. It is used to seperate ~~all the componen~~ the components of mixture when all the componen are so very ~~sessin~~ similar in their properties.

b) What are the advantages of chromatography ?

ans Advantages of chromatography are :-

1. A very small quantity of ~~the~~ the mi ~~stum~~ substance can be ~~sepera~~ separated.
2. Components with very similar physical and chemical properties can be separated.
3. It ~~solen~~ identifies the differenat constituents of a mixture.
4. It also helps in quantitative estimation of components of a mixture.

c) Give two application of ~~b~~ chromatography.

1) ~~To~~ To seperate
   a) colour in ~~drugs~~ a dye
   b) drugs from ~~pigments~~ bloods
   ~~c) Pigments from natural colours~~
   c) ~~Pigment~~ Pigments from natural colours
2)

2) to purify many industrial products.

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Revision

I Derive the molecular formula of the following compounds

1) Calcium Oxalate
2) Magnesium Bicarbonate
3) Potassium chromate

I Balance the following chemical equation.

1) Zinc Carbonate $\xrightarrow{\text{heat}}$ Zinc oxide + Carbon dioxide.
2) Lead nitrate $\xrightarrow{\text{on heating}}$ Lead oxide + Nitrogen dioxide + Oxygen
3) Ammonia + Hydrochloric acid → Ammonium Chloride +

II Suggest a suitable technique to seperate the constituents of the following mixtures

1. Clay and Water
2. Stones and rice
3. Sawdust and sand

Answers

I i) Ca^{2+} $(COO)_2^{2-}$

2 2

$Ca(COO)_2$

ii) Mg^{2+} HCO_3^{-1}

2 1

~~MgCl~~ $Mg(HCO_3)_2$

iii) ~~K~~^{2} K^+ CrO_4^{2-}

1 2

K_2CrO_4

II 1. $ZnCO_3 \longrightarrow ZnO + CO_2$

Zn	1		1
C	1		1
O	3		1 + 2

∴ The balanced chemical equation is $ZnCO_3 \rightarrow ZnO + CO$

2- $Pb(NO_3)_2 \longrightarrow PbO + NO_2 + O_2$

Pb	1 2	1 2
N	2 4	1 4
O	6 12	2 1 + 2 + 2

∴ The balanced chemical equation is $2Pb(NO_3)_2 \longrightarrow 2PbO + 4NO_2 + O_2$

3. $NH_3 + HCl \longrightarrow NH_4Cl$

N	1	1
H	3 + 1	4
Cl	1	1

∴ The balanced chemical equation is $NH_3 + HCl \rightarrow NH_4Cl$

III 1. Sedimentation and Decantation Filteration
2. Hand picking
3. Gravitational Method.