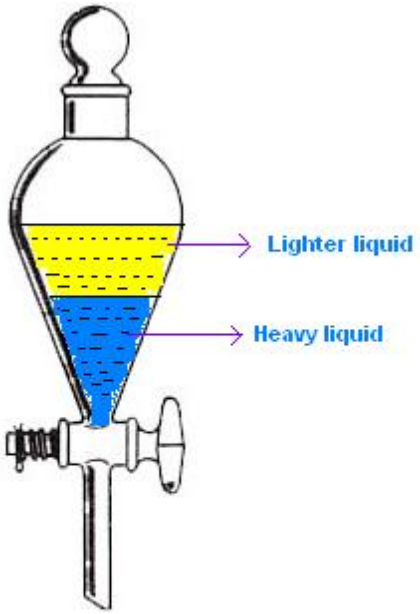
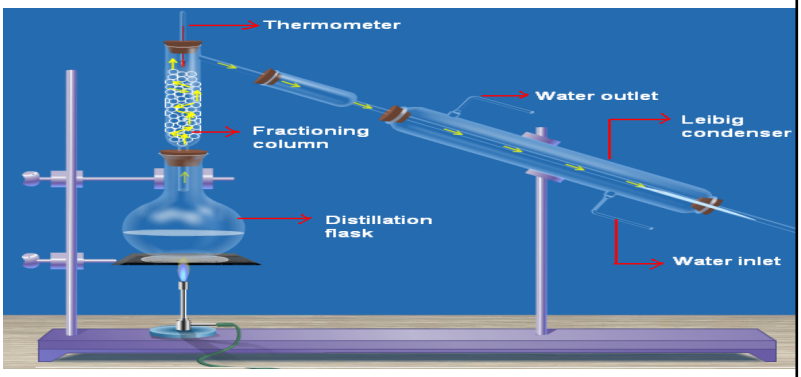
ODM EDUCATIONAL GROUP
Changing your Tomorrow

ODM Teachers' Note

Class	VII	Subject	CHEMISTRY
PD	7	Chapter-3	ELEMENTS, COMPOUNDS AND MIXTURES
Recapitulation of the previous taught.	• Separation of Solid-Liquid Mixtures. • Sedimentation and Decantation • Filtration • Evaporation • Crystallisation • Distillation • Centrifugation		
Sub-Concepts	❖ Separation of Liquid-Liquid Mixtures. • By Separating Funnel • Fractional Distillation ❖ Separation of Gas-Liquid Mixtures.		
Teaching Aid To be used	Smart Class, PowerPoint presentation, classroom objects, charts.		
Learning Outcome	✔ They would know of the separation of Liquid-Liquid mixtures like: - • By Separating Funnel • Fractional Distillation ✔ Separation of Gas-Liquid mixtures.		
Sl. No	Step Wise (What to be done)		
1 Introduction	For Achievers Teacher should initiate the discussion on following topics, which will revolve around the core topic of the chapter like, What's your view on the separation of Liquid-Liquid	For Average ➤ They would made familiar with the on the separation of Liquid-Liquid mixtures? ➤ They would know of the	

	mixtures? ➤ Vision to acquire knowledge of the need for the separation of mixtures using separating funnel and Fractional Distillation. ➤ Vision to get knowledge of separation of Gas-Liquid mixtures.	process of separating funnel and Fractional Distillation.
2.Separating funnel	Separating funnel: When two liquids do not mix, they form two separate layers and are known as immiscible liquids. These two liquids can be separated by using a separating funnel. A separating funnel is a special type of glass funnel, which has a stopcock in its stem to regulate the flow of liquid. It will separate the immiscible liquids into two distinct layers depending on their densities. The heavier liquid forms the lower layer while the lighter one forms the upper layer. Remove the stopper and open the tap to run the lower layer into a beaker. You will be left behind with just the upper layer in the funnel. Collect this liquid into another beaker. Examples: Kerosene and water mixture is separated by using separating funnel method. This method is also used to extract iron from its ore.	

	 Separation of immiscible liquids using separating funnel
3- Fractional Distillation	**Fractional distillation method:** In case the difference in the boiling points of the liquids is less than 25K temperature, we use the fractional distillation method. The apparatus is almost the same as used in distillation. The only difference is that a fractioning column is fitted in between the distillation flask and the condenser. A simple fractioning column is made up of a tube packed with glass beads. The beads provide the surface for the vapours to cool and condense again and again. The fractioning columns obstruct the smooth upward flow of vapours. Example: A mixture of n-hexane and n-heptane can be separated through the process of fractional distillation. Put the mixture into a distillation flask. Heat the mixture. The vapours of, n-hexane has a lower boiling point pass through and get condensed in the condenser. n-heptane, which has a higher boiling point, condenses and flows back into the distillation flask.

	 The gases in the air are separated from one another by the fractional distillation of liquid air. Air is made up of different gases like nitrogen, oxygen and carbon dioxide. These gases are separated from one another by the fractional distillation of liquid air.
4. Separation of Gas-Liquid Mixtures.	• A mixture of gas in liquid can be separated by heating. • Dissolved gas escapes from the liquid on heating. • Example: - Drinking water contains air dissolved in it. When it is boiled, air escapes and so the boiling water becomes tasteless.
5.Home Assignment	Exercise -II Q6 & Q7