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Organic Chemistry

The three properties of good extraction solvents include: immiscibility with the solution to be extracted, should have poor solubility of impurities and should have a good solubility of the target compound.

Drying is done so as to further separate the aqueous layer from the organic layer, and to do away with any water particles present in the organic layer, as it needs to be as pure as possible to achieve a high percent clarity of the extraction.

- i) Liquid-liquid extractions using a separatory funnel where two immiscible liquids are used in the extraction procedure meaning that they form two layers when added collectively, like water and oil. Some compounds are more soluble in the 'oil' organic layer while some are more soluble in the 'water' aqueous layer.
 - ii) Using an organic solvent (non polar) to extract an organic compound from an aqueous solution. Due to the fact that water is highly polar, the mixture breaks down to an aqueous layer and a non polar (organic) layer.
8. The benzaldehyde separation from benzoic acid impurities is done by washing benzaldehyde with a solution of sodium carbonate and redistilling while taking essential precautions to prevent free contact of air to the distillate.
10. The correct answer is e. This is because Diethyl ether has limited solubility in water. Thanks to its high volatility, it is ideal for use as the non-polar solvent in liquid-liquid extraction and when used with an aqueous solution, the diethyl ether layer is on top because it has a lower density than the water.