

- 1- How we can increase the K_D value for any extraction system?
- 2- What was the principles of solid-phase extraction and how can be applied?
- 3- Extraction of covalent, neutral molecules was greatly depends on the pH, Explain that with suitable diagram and equation?
- 4- What is the principles of solid phase extraction and how can be applied?
- 5- Explain, with suitable diagram and equation, what is the effect of complex formation on the extraction of covalent, neutral molecules?
- 6- The partition coefficient for X between chloroform and water is 9.6. calculate the concentration of X remaining in the aqueous phase after 50ml of 0.15M X is treated by extraction with the following quantities of chloroform
 - a. One 40ml portions
 - b. Two 20ml portions
 - c. Four 10ml portions

What is your conclusion?

- 7- How we can increase the K_D value for any extraction system?
- 8- In the separation by volatilizations methods the gas may be produced by several procedures?**
- 9- The differences between steam distillation and immiscible solvent distillation.**
- 10- According to what you select the solvent in liquid-liquid extraction system.**
- 11- If K_D for I_2 between CCl_4 and water are equal to 85, calculate the number of mmol of I_2 remained in 100ml of aqueous solution which its concentration= 0.02 M**
 - 1-After two extractions with 50ml CCl_4 portion**
 - 2-After one extraction with 100ml CCl_4 portion**

- 12- What was the effect of complex formation on the extraction of essentially covalent and neutral molecules system?
- 13- Compound A may be removed from an aqueous solution by contact with ether. The distribution coefficient is about 10. If you had an aqueous solution containing 2.5 mg of A, how much could be extracted from an aqueous solution with an equal volume of ether?
- 14- Iodine may be extracted from an aqueous solution into various organic solvents. The distribution coefficient for extraction by CCl_4 is 85. If 50 ml of an aqueous solution containing 2×10^{-2} mmol of I_2 is contacted with 30 ml of CCl_4 , calculate the amount of I_2 in the aqueous phase and the amount in the CCl_4 phase.
- 15- **Assume that 4gm of butyric acid is to be extracted from 500ml of water with 500ml of ether, the $K_D=3$, calculate the percentage of extraction for**
- 1-Single batch ether.**
 - 2-The ether is used in two successive 250ml portions.**
 - 3-The ether is used five 100ml portions.**
 - 4-With 10 times, using 50ml ether.**
 - 5-Explain what you observe from the obtained results**
- 16- **Limitations of liquid-liquid extraction systems.**
- 17- **The pH effect on the extraction of covalent, neutral molecules.**