

**T. E. (Chemical)**  
**MASS TRANSFER - II**  
**(Semester - II)**

1. Explain constant and variable underflow
2. Explain variable underflow with graphical representation. Why does variable underflow condition arise?
3. Give the functioning of any continuous Extractor for leaching.
4. Schematically represent a single stage batch leaching unit giving all the phases and explaining all the terms.
5. Explain with a sketch and graphical representation the development of breakthrough curve and explain it in detail.
6. What is the advantage of using a vacuum crystallizer?
7. What is ultrafiltration? Give details regarding types of membrane used for the process and an application.
8. What parameters affect the shape of breakthrough curve?
9. Derive the equation for continuous countercurrent adsorber.
10. Explain the method for finding number of stages in continuous countercurrent leaching.
11. Explain the Langmuir and Freundlich isotherms.
12. What is LUB? Derive relevant equations and give diagrammatic and graphical representation.
13. Explain Mier's supersaturation theory.
14. Give the classification of membranes based on driving forces applicable and particle size retained.