Name: **Enrolment No:**	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2023

Programme Name: B.Tech (CERP) **Semester : VII**
Course Name : Advance Separation Techniques **Time : 3 h**
Course Code : CHCE3035P **Max. Marks: 100**
Nos. of page(s) : 01

Instructions: In case of data missing make necessary assumptions

S.No.	**Section A** (Attempt all questions)	**Marks**	**CO**
Q 1	List out the advantages and limitations of membrane separation processes over the conventional separation processes	4 M	CO1
Q 2	Draw a neat sketch of a crossflow membrane process	4 M	CO2
Q 3	What are the applications of Ion exchange process?	4 M	CO1
Q 4	What are the essential properties of a good supercritical solvent?	4 M	CO1
Q 5	Explain the use of lyophilization in chemical engineering?	4 M	CO1
	Section B (Attempt all questions)		
Q 6	Explain the common reasons for flux decline in ultrafiltration. Discuss concentration polarization phenomena in ultrafiltration	10 M	CO2
Q 7	Discuss the process of desalination of water using Electrodialysis with the help of a neat schematic diagram.	10 M	CO2
Q 8	What is the application of dehumidification? List different methods used to achieve dehumidification.	10 M	CO3
Q 9	Outline the techniques used for controlling and managing oil spills.	10 M	CO4
	Section C (Attempt all questions)		
Q 10	Demonstrate paper electrophoresis with neat schematic and give specific applications?	20 M	CO3
Q 11	Summarize various membrane modules used in membrane separation processes. Explain in detail about spiral wound membrane module with neat schematic.	20 M	CO2