Name: **Enrolment No:**	UPES UNIVERSITY OF TOMORROW

UPES

End Semester Examination, December 2024

Course: Geosequestration methods **Semester: III**

Program: MSc Petroleum Geoscience **Time: 03 hrs.**

Course Code: PEGS 7039P **Max. Marks: 100**

Instructions: Draw correct diagram whenever requires

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Explain different injection parameters associated with CO_2 geosequestration.	4M	CO1
Q 2	Explain oxyfuel combustion and membrane separation of CO_2 capture.	4M	CO2
Q 3	List the effects of global warming in climate change.	4M	CO3
Q 4	List the types of geosequestration processes.	4M	CO1
Q 5	Describe the phase behavior of CO_2 in saline aquifer.	4M	CO3
	SECTION B **(4Qx10M= 40 Marks)**		
Q 6	Discuss case studies of CCUS for (a) CO2 mineralization, (b) geosequestration in depleted reservoir.	5+5=10 M	CO2
Q 7	(a) Explain different Monitoring techniques for CO_2 storage. (b) Stratigraphic Trapping	5+5=10 M	CO3
Q 8	Discuss the storage capacity classification and estimation process.	10M	CO3
Q 9	Elaborate CO_2 trapping mechanism in geosequestration using schematic diagrams.	10M	CO4
	SECTION-C **(2Qx20M=40 Marks)**		
Q 10	(a) Discuss the CO_2 storage potential in basalt formation of India. (b) Elaborate worldwide ongoing projects on CO_2 storage in basalt.	10x 2= 20 M	CO4
Q 11	Create a table with all the screening criteria for CO_2 geosequestration in following geology media (a) Shale	5X4= 20 M	CO5

	(b) Sandstone (c) Basalt (d) Saline aquifer (e) Limestone **OR** Create a schematic diagram to explain the CO_2 Capturing processes. Discuss application and working principle of each part of it. (b) Discuss how this technique is different from the existing techniques. (c) Discuss the advantages and disadvantages. (d) Analyze the field scale utility of the innovation.	**5x 4= 20 M**	