Name:	
Enrolment No:	UPES UNIVERSITY OF TOMORROW

End Semester Examination, May 2023

Course: Geosequestration

Program: MSc Petroleum Geoscience

Course Code: PEGS 7039P

Semester: II

Time   : 03 hrs.

Max. Marks: 100

Instructions: Draw correct diagram whenever requires

SECTION A (5X4=20Marks)

S. No.		Marks	CO
Q 1	Explain the significance of geosequestration in global warming.	4M	CO1
Q 2	Describe the CO_2 capture techniques	4M	CO2
Q 3	Explain about carbon emission and climate change.	4M	CO3
Q 4	Explain the CO_2 utilization techniques.	4M	CO3
Q5	Describe the phase behavior of CO_2 in saline aquifer.	4M	CO2
SECTION B **(4Qx10M= 40 Marks)**			
Q 6	Illustrate the following techniques of carbon capture, (a) PRE-COMBUSTION (b) POST COMBUSTION	10M	CO2
Q 7	(a) Distinguished between carbon storage mechanism in siliciclastic and carbonate reservoirs. (b) Explain the significance of porosity and permeability of shale reservoir in carbon sequestration.	10M	CO3
Q 8	(a) Discuss about the Adsorption carbon capture system. (b) Describe the membrane separation system in terms of physical and chemical fundamentals.	10M	CO4
Q 9	Elaborate CO_2 trapping mechanism in geosequestration using schematic diagrams. **OR** Elaborate the geomechanical feathers in terms of storage formation type and geometry; in situ stress and pore pressure.	10M	CO4
SECTION-C **(2Qx20M=40 Marks)**			

Q 10	Create a table with all the screening criteria for co2 geosequestration in following sites (a) Basalt (b) Limestone (c) Shale (d) Sandstone (e) Saline aquifer	4x5=20 M	CO5
Q 11	(a) Draw and explain an innovative carbon capture technology. Draw the diagram, label it and discuss application of each part, (b) How your innovation is different from the previous set up. (c) Discuss the advantages and disadvantages of your setup. (d) Analyze the field scale utility of the innovation. **OR** (a) Draw and discuss a schematic diagram for carbon storage technology. Draw the diagram, label it and discuss application of each part, (b) Explain how your innovation is different from the previous set up. (c) Discuss the advantages and disadvantages of your setup. (d) Analyze the field scale utility of the innovation.	4X5=2 0M	CO5