Name: **Enrolment No:**	

UPES

End Semester Examination, Dec 2024

Course: Unconventional Hydrocarbon Resources **Semester: V**

Program: Btech APE_UP **Time : 03 hrs.**

Course Code: PEGS3044 **Max. Marks: 100**

Instructions: All questions are mandatory.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Define the term "SHALE GAS" with respect to the hydrocarbon industry.	**4**	**CO1**
Q 2	Enlist some of the advantages associated with the CBM.	**4**	**CO1**
Q 3	Highlight the major differences between "Unconventional and conventional Hydrocarbon Resources"	**4**	**CO1**
Q 4	Explain in brief "In-situ Retention" of the hydrocarbon with respect to the shale gas.	**4**	**CO2**
Q 5	List out the major "supporting evidence" for the shale gas to be potential alternate fuel.	**4**	**CO2**
SECTION B (Attempt only 4) **(4Qx10M= 40 Marks)**			
Q 6	Explain the key changes that take place in the process of catagenesis during the generation of the HC. Also provide the suitable temperature pressure condition for the process.	**10**	**CO3**
Q 7	Categorize various chemical structure of the gas hydrates along with the type of gas hydrates. Also highlight the details about its lattice structure.	**10**	**CO4**
Q 8	Describe various "development techniques" industry for the GHs.	**10**	**CO3**
Q 9	Contrast and compare the key differences between the shale gas and natural gas.	**10**	**CO4**
SECTION-C (Attempt only 2) **(2Qx20M=40 Marks)**			
Q 10	Explain in detail the characteristics of the shale of the shale gas reservoir. Highlight various physical properties with its significance and appropriate range for the shale gas reservoir.	**20**	**CO3**
Q 11	Describe in detail various development techniques for the NGHs.	**20**	**CO4**
Q 12	Express your views on the statement. "India will be energy independent by 2050." Highlight various key steps to be taken to achieve it.	**20**	**CO5**