


Name:			
Enrolment No:			
UPES End Semester Examination, May 2024			
Course: Unconventional Hydrocarbon Resources		Semester: II	
Program: M Tech Petroleum Engineering			
Time : 03 hrs.			
Course Code: PEGS7041		Max. Marks: 100	
Instructions: All questions are mandatory			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	Describe the term “migration” with respect to the hydrocarbon generation and list out its types.	4	CO3
Q 2	Enlist at least five unconventional hydrocarbon resources	4	CO1
Q 3	Define the “Shale Gas”	4	CO3
Q 4	Highlight the major difference between conventional and unconventional hydrocarbon resources.	4	CO1
Q 5	List some of the national goals that CBM could fulfil.	4	CO2
SECTION B (Attempt any 4 only) (4Qx10M= 40 Marks)			
Q 6	Describe the key process and changes occur during the diagenesis along with the suitable pressure temperature ranges.	10	CO2
Q 7	Highlight the difference between the biogenic and thermogenic origin of gases.	10	CO2
Q 8	Enumerate the major steps involved for the “geologic evaluation technique” for the shale gas	10	CO3
Q 9	Explain the evolution of the gas hydrates by highlighting various major developments in the history.	10	CO4
Q 10	Compare and contrast the key difference between various physical properties of the methane gas hydrates and ice.	10	CO4
SECTION-C (Attempt any 2 only) (2Qx20M=40 Marks)			
Q 11	Provide your views about the alternate energy sources which you think can replace the oil and gas industry. Can India achieve Net Zero Carbon emission by 2050? Explain your views in detail.	20	CO5
Q 12	Explain in details various problems associated the exploitation of the shale gas.	20	CO3
Q 13	Explain with diagram about the gas hydrate stability zone and how does the permafrost and oceanic region have an impact on the gas hydrates phase diagram. Also list out various evaluation technique used for the gas hydrates.	20	CO4