

Name:			
Enrolment No:			
UPES End Semester Examination, December 2023			
Course: Introduction to petroleum operations Semester: III Program: APE UP Course Code: PEAU 2002		Time : 03 hrs. Max. Marks: 100	
Instructions: All questions are compulsory. There is no overall choice. Draw the diagram wherever required.			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
1	Define saturation and permeability.	4	CO1
2	List different types of petroleum reserves.	4	CO3
3	Enumerate the drilling preliminaries done.	4	CO2
4	Describe the different migration techniques in petroleum system.	4	CO4
5	Define lost circulation.	4	CO2
SECTION B (4Qx10M= 40 Marks)			
6	Discuss the components of a petroleum trap.	10	CO1
7	Diagrammatically represent the different surface production facilities of an oil well.	10	CO2
8	Describe the primary recovery mechanisms in an oil reservoir. OR Describe the significance of oil well logging.	10	CO3
9	Explain different steps of well completion in a vertical well.	10	CO4
SECTION-C (2Qx20M=40 Marks)			
10	An oil reservoir exists at its bubble-point pressure of 3000 psia and temperature of 160°F. The oil has an API gravity of 42°, gas-oil ratio of 600 scf/STB and Oil Formation Volume Factor 1.3 bbl/STB. The specific gravity of the solution gas is 0.65. The following additional data are also available: • Reservoir area = 800 acres	20	CO3

	<ul style="list-style-type: none"> • Average thickness = 20 ft • Connate water saturation = 0.25 • Effective porosity = 15% <p>Calculate the initial oil in place in STB.</p>		
11	Explain the steps of oil field development.	20	CO4