

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, Dec 2021

Program Name : B. TECH (Applied Petroleum Engineering-Up Stream)	Semester : III
Course Name : Introduction to Petroleum Operations	Time : 03 hrs
Course Code : PEAU 2002	Max. Marks: 100
Nos. of page(s) : Two only	
Instructions: Answer should be precise & to the point.	

SECTION A

S. No.		Marks	CO
Q 1	List the properties of basement rocks.	4	CO1
Q2	Use volumetric analysis to estimate OOIP given the following data: -Bulk reservoir volume 9240 acre-ft -Oil saturation 0.70 -Porosity 0.228 -Initial pressure P_i 3935psia -Oil FVF at P_i 1.3473 RB/STB Water FVF is B_w 1.0RB/STB	4	CO3
Q3	Define artificial lift method with examples.	4	CO3
Q4	Write short note on horizontal wells.	4	CO2
Q5	True or False 1. Water flooding is a primary recovery mechanism. 2. The gas cap is gas dissolved in the oil phase. 3. A distillation tower separates crude oil into mixtures of components based on the boiling points of the mixtures. 4. Gas compression can maximize use of pipeline space by increasing the density of gas flowing through the pipeline.	4	CO5

SECTION B

Q 6	An undersaturated oil reservoir is being produced by primary depletion until the reservoir pressure is just above bubble point pressure. The reservoir did not have an initial gas cap and is not in communication with any mobile water. There is no water production. What are the possible drive mechanisms?	10	CO3
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Q 7	Describe formation evaluation. What are the methods involved in it	10	CO4
Q 8	Explain the mud logging method.	10	CO4
Q9	Explain the midstream and downstream petroleum operations.	10	CO5
SECTION-C			
Q10	<p>a) List the differences between infill drilling and injection wells.</p> <p>b) Primary recovery from an oil reservoir was 100 MMSTBO. A water flood was implemented following primary recovery. Incremental recovery from the water flood was 25% OOIP. Total recovery was 50% OOIP. How much oil (in MMSTBO) was recovered by the water flood?</p> <p>c) What was the OOIP (in MMSTBO)</p>	20	CO3
Q11	<p>a) Explain Primary recovery mechanisms. Write short note on any one of its types.</p> <p>b) Define Skin. List the factors responsible for near well bore damage.</p>	20	CO3