



PRESIDENCY UNIVERSITY

BENGALURU

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End - Term Examinations – May / June 2026

Date: 27 -05-2026

Time: 09:30am – 12:30pm

School: SOE	Program: B.Tech (PET)	
Course Code : PET1201	Course Name: Fundamentals of Oil and Gas Operations	
Semester: II	Max Marks: 100	Weightage: 50%

CO - Levels	C01	C02	C03	C04	C05
Marks	-	10	18	36	36

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks.

10Q x 2M=20M

1.	Define the terms 'reverse circulation' and 'plug and abandon'.	2 Marks	L1	C03
2.	Describe porosity and permeability.	2 Marks	L1	C03
3.	List atleast two advantages of pipeline transport.	2 Marks	L1	C03
4.	Outline the different approved PPE kit for site safety.	2 Marks	L1	C03
5.	Describe 'IOR' and 'EOR'.	2 Marks	L1	C04
6.	List some environmental impact of using non-renewable energy sources.	2 Marks	L1	C04
7.	Describe "spud in" and "tearing down" in drilling rig operation.	2 Marks	L1	C04
8.	Outline a few general safety practices to follow while using equipment or tools in oil and gas industry.	2 Marks	L1	C05
9.	Define basin along with an example.	2 Marks	L1	C05
10.	List one pros and cons of bio mass energy.	2 Marks	L1	C05

Part B

Answer the Questions.

Total Marks 80M

11.	Distinguish between Brent Crude and WTI by identifying and explaining five key differences.	10 Marks	L2	CO2
Or				
12.	Review the different types of petroleum companies in the industry and explain their functions, citing examples to highlight their importance.	10 Marks	L2	CO2
13.	Classify the rotating system components of a drilling rig and explain each component in detail.	10 Marks	L3	CO3
Or				
14.	Prepare a labeled sketch of the circulating system of a drilling rig and describe the function of each component in detail.	10 Marks	L3	CO3
15.	Examine the New Exploration Licensing Policy (NELP) by discussing its background, objectives and necessity, salient features, details of the various NELP bidding rounds, and the reasons for the discontinuation of NELP-X.	10 Marks	L3	CO4
Or				
16.	Prepare a detailed analysis of how OPEC and OPEC+ control global oil markets, and evaluate their influence during key geopolitical events such as the 1973 oil crisis, Iraq's invasion of Kuwait, and Operation Desert Storm.	10 Marks	L3	CO4
17.	Relate the economic, environmental, and geopolitical risks inherent in the oil and gas industry, providing relevant examples from recent history.	10 Marks	L4	CO5
Or				
18.	Identify the evolution of the Indian oil and gas industry from 1886 to 2016, highlighting key milestones from the pre-industrial era to the modern day. Compare significant developments, discoveries, and policy changes that shaped the industry's growth.	10 Marks	L4	CO5
19.	Classify various key drilling rig components and their importance in carrying out an efficient and effective drilling of an oil well.	20 Marks	L3	CO4
Or				
20.	Determine the role of tubular and tubular handling equipment in rotary drilling rigs. Predict the functions of at least twelve key	20 Marks	L3	CO4

	components used for moving, making, and breaking connections, and for suspending tubulars on the rig. Your answer should include the equipment name along with their functions and uses.			
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21.	Analyze the line organization of the rig crew on an oil drilling site. Breakdown the hierarchical structure starting from the Drilling Superintendent down to the entry-level positions. Highlight the roles and responsibilities of all the key personnel such as the Rig Manager, Toolpusher, Driller, and Derrickman. Explain how support roles like the Electrician, Welder, Safety & Training Specialist, and Maintenance Engineer fit into the organization. The answer should also reflect on how coordination among these roles ensures efficient drilling operations.	20 Marks	L4	C05
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Or

22.	Compare the different stages of oil recovery from a reservoir, starting from the initial production phase to the most advanced recovery techniques —Primary, Secondary, and Tertiary. Analyze the general principles and efficiency range of each stage, and discuss how various physical, chemical, and thermal methods are employed to enhance oil production in later stages.	20 Marks	L4	C05
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