



PRESIDENCY UNIVERSITY

BENGALURU

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End - Term Examinations – May / June 2026

Date: 25-05-2026

Time: 01:00pm – 04:00pm

School: SOE	Program: B.Tech. (PET)	
Course Code: PET2018	Course Name: Integrated Field Development and Planning	
Semester: VI	Max Marks: 100	Weightage: 50%

CO - Levels	C01	C02	C03	C04	C05
Marks	04	08	04	44	40

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.	Arrange the various stages of the life cycle of a well.	2 Marks	L1	C01
2.	List any two feature of NELP.	2 Marks	L1	C01
3.	State any two objective of field appraisal.	2 Marks	L1	C02
4.	Define Mobility Ratio.	2 Marks	L1	C02
5.	Outline any two consequence of not opting field appraisal.	2 Marks	L1	C02
6.	Define Field Development.	2 Marks	L1	C02
7.	List any two types of EOR techniques.	2 Marks	L1	C03
8.	Describe the concept of Decommissioning.	2 Marks	L1	C03
9.	Define Reservoir Management.	2 Marks	L1	C04
10.	State the prime objective of Reservoir Management.	2 Marks	L1	C04

Part B

Answer the Questions.

Total Marks 80M

11.	a.	Illustrate the bathtub curve and classify its three regions based on failure behavior. Further, examine how this understanding can be used to select appropriate maintenance strategies.	10 Marks	L3	C04
	b.	A pump typically fails due to bearing wear after 8000 operating hours. Determine and propose a suitable maintenance strategy for the following cases: (a) when the pump is highly critical and no spare is available (b) when a full-capacity spare pump is installed. Justify your choice based on reliability and operational impact.	10 Marks	L3	C04
Or					
12.	a.	Illustrate and apply different maintenance strategies used in production operations with suitable industrial examples. Examine how each strategy can be used under different operational conditions.	10 Marks	L3	C04
	b.	Using the export pump example, analyze and demonstrate how maintenance strategy changes when: (a) a single 12 Mb/d pump is used (b) two 12 Mb/d pumps are operated in parallel. Interpret the impact on production continuity and system reliability.	10 Marks	L3	C04

13.	a.	Examine and illustrate the process of decommissioning oil and gas installations. Apply key considerations such as safety, environmental impact, and cost while planning a decommissioning strategy.	10 Marks	L3	C04
	b.	Analyze and interpret the role of legislation and international guidelines in offshore decommissioning. Demonstrate how these regulations influence decision-making and operational practices.	10 Marks	L3	C04
Or					
14.	a.	Classify and examine the different funding mechanisms used to manage decommissioning costs in the oil and gas industry. Determine their suitability under varying project conditions.	10 Marks	L3	C04

	b.	Illustrate and apply different decommissioning methods for wells, pipelines, offshore, and land-based facilities. Compare and evaluate their effectiveness based on operational and environmental factors.	10 Marks	L3	C04
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15.	Analyze the role of an integrated reservoir management team in optimizing field performance. Further, examine how a “basketball team approach” differs from a “relay team approach” in reservoir management. Discuss how effective coordination, communication, and decision-making can be achieved to ensure a fully integrated team approach.	20 Marks	L4	C05
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Or

16.	Analyze the structure of a reservoir management team and examine the roles of different disciplines involved. Using a suitable example, demonstrate how a “one team approach” can be implemented effectively. Further, analyze the importance of integration between geoscience and engineering, and evaluate how integrating exploration and development technologies improves reservoir performance and decision-making.	20 Marks	L4	C05
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17.	Reservoir management is a continuous and systematic process for optimizing hydrocarbon recovery. Analyze the reservoir management process by outlining its key stages. Further, examine how data acquisition, reservoir modeling, performance monitoring, and decision-making are integrated within this process to improve production efficiency and recovery.	20 Marks	L4	C05
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Or

18.	Case studies provide valuable insights into practical reservoir management strategies. Analyze any one reservoir management case study and illustrate the challenges faced, strategies implemented, and outcomes achieved. Further, evaluate the lessons learned and how they can be applied to other reservoir systems.	20 Marks	L4	C05
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