

Name:
Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, Dec 2021

Course: Offshore Drilling and Production Operations
Program: B.Tech-APEUP
Course Code: PEAU 4017

Semester: VII
Time 03 hrs.
Max. Marks: 100

Instructions: All questions in all sections are compulsory.

SECTION A
Each question in section A carries 4 marks.

S. No.		Marks	CO
Q 1	Name three types of drilling rigs used in offshore environment along with approximate maximum water depth in which they can operate.	4	CO1
Q 2	Calculate the scope of a mooring line whose length is 10000 ft. and water depth is last three digits of your SAP id.	4	CO2
Q 3	List and describe five types of health hazards associated with working in an offshore platform.	4	CO3
Q4	Calculate the maximum permissible offset of a semi-submersible rig in feet under operational, non-operational and disconnected mode, when water depth in feet is equal to last four digits of your SAP id.	4	CO2
Q 5	Calculate the volume in barrels of mud fill required in a well if an open-ended drill pipe of 5-inch outer diameter and 4-inch inner diameter is pulled out of well by length equal to last four digits of your roll number?	4	CO1

SECTION B
Attempt all questions. Each question in section B carries 10 marks.

Q 6	Describe the blow out safety practices that are followed in offshore deep-water operations?	10	CO3
Q 7	Describe the role of weather fronts in causing severe weather conditions and explain the difference between cold front and warm front.	10	CO2
Q8	Explain the functions of ROV in deep water operations. Describe the possible physiological changes seen in a diver during diving operations.	10	CO3
Q9	What are consequences of exposure to H ₂ S during drilling and production operations? Describe in brief safety measures required while drilling a well in a known H ₂ S producing oil field.	10	CO4

SECTION-C
Attempt all questions. Each question in section C carries 20 marks.

Q10	Explain in detail the difference between offshore operations done for drilling an oil and gas well from a jack up rig operating in 200 feet water depth to that of a semi-submersible rig operating in 5000 ft water depth.	20	CO4
Q11	Describe in detail all possible subsurface, mechanical, weather and logistics related challenges associated with drilling a deep water well from a drill ship.	20	CO5