

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, Dec 2022

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 are compulsory. There are internal choices in question 7 and 11.

SECTION A

S. No.		Marks	CO
Q 1	Write a short definition of Coriolis force. Draw figures to show the movement of wind around high and low pressure due to Coriolis force in the northern hemisphere.	4	CO1
Q 2	Describe the difference between buoyancy and reserve buoyancy.	4	CO1
Q 3	Describe lag time and lag depth while drilling a well section.	4	CO1
Q 4	Name four types of floating production platforms along with approximate maximum depth in which they be installed.	4	CO1
Q 5	Name five types of environment pollution caused due to offshore operations. In your opinion, which two pollution types are most common?	4	CO1

SECTION B

Q 6	Draw suitable diagram that illustrates cantilever type derrick on jack up rig and explain the advantages of having cantilever type derrick in jack up drilling platforms.	10	CO3
Q 7	With suitable diagram, describe in detail, five type of clouds found in earth's atmosphere? OR Distinguish between weather and climate and discuss the measures taken in offshore drilling platforms in the event of extreme weather conditions.	10	CO2
Q 8	Explain what moon-pool is and describe its role in drilling and production operations from a floating vessel.	10	CO2
Q 9	Discuss formation ballooning and explain how we control the apparent mud loss due to this phenomena,	10	CO3

SECTION-C

Q10	Discuss why we need ROV technology for deep-water operations. Describe in detail six uses of ROV technology in drilling and production operations.	20	CO4
Q11	Elaborate in detail the health safety and environment issues faced by oil and gas operating companies in offshore environment.	20	CO5

OR

With suitable diagram, explain Archimedes principle, center of gravity and center of buoyancy of a floating vessel. Elaborate in detail the factors that contribute to stability of a vessel in offshore environment.