


Name:			
Enrolment No:			
UPES End Semester Examination, December 2023			
Course: Offshore Drilling and Production Operations Program: B Tech APE UP Course Code: PEAU4017 Instructions: All the questions are compulsory		Semester: VII Time : 03 hrs. Max. Marks: 100	
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	List the types of forces acting on a floating vessel, along with their axes of application.	4	CO1
Q 2	Explain in detail the four factors that determine wave height and their impact on wave formation	4	CO2
Q 3	Identify and discuss health hazards associated with working in an offshore platform.	4	CO2
Q 4	List the components of spread mooring system in details.	4	CO1
Q 5	Discuss the differences between Cementing Operation Onshore versus Offshore.	4	CO3
SECTION B (4Qx10M= 40 Marks)			
Q 6	Enumerate the components of the marine riser and its functions in an offshore rig.	10	CO3
Q 7	Describe with suitable diagram how weather fronts contribute to the development of severe weather conditions like cyclones.	10	CO3
Q 8	Discuss the Floating Production Storage and Offloading (FPSO) in detail. Or Discuss the concrete gravity structures and its components in detail.	10	CO3
Q 9	Discuss the dynamic positioning system (DPS) in detail with its components.	10	CO4
SECTION-C (2Qx20M=40 Marks)			
Q 10	Illustrate and explain in detail with the help of diagram the drilling process of a hypothetical directional well from a semi-submersible offshore rig operating in 1000 ft water depth with following details:	20	CO4

	Casing Size (in)	Hole Size (in)	MD (ft)	TVD (ft)	Mud Weight Plan (ppg)		
	26	NA	350	350	NA		
	18 5/8	22	1000	1000	8.6-9.0		
	13 3/8	17 1/2	4500	4500	9.0-9.3		
	9 7/8	12 1/4	14400	12500	12.5-12.7		
	7	8 1/2	18300	14350	12.7-14.9		
	5	6 1/2	22000	16500	14.9-16.1		
Q 11	Evaluate the different types of well completion methods used in offshore drilling rigs. <p style="text-align: center;">Or</p> Illustrate and describe installation procedure for a Jacketed Platform.					20	CO4