

Name:	
Enrolment No:	

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, Dec 2019**

<b>Course: Drilling Engineering</b>	<b>Semester: I</b>
<b>Program: M Tech-PE</b>	<b>Time 03 hrs.</b>
<b>Course Code: PEAU 7001</b>	<b>Max. Marks: 100</b>

**Instructions: All questions are compulsory. There is no overall choice. However, internal choice is there in some questions. You have to attempt only one of the alternatives in all such questions.**

**SECTION A**

S. No.		Marks	CO
Q 1	List three types of rigs used for offshore drilling. Explain which of these rigs is best suited for drilling in continental shelf.	4	CO1
Q 2	Calculate Hydrostatic pressure at the bottom of well bore of 12000 ft. measured depth and 11400 ft. vertical depth filled with mud of 12 ppg.	4	CO5
Q 3	Name four types of weighing material used to increase Specific gravity of drilling fluid.	4	CO3
Q 4	Describe the advantage of using CaCO <sub>3</sub> as mud additive.	4	CO2
Q 5	Explain in brief the role of viscofier in drilling fluids?	4	CO4

**SECTION B**

Q 6	Explain the role of KCL polymer mud in well bore stability.	10	CO4
Q 7	Explain why drill ships are more suitable for ultra-deep water drilling in comparison to jack-up and semi-submersible rigs.	10	CO1
Q8	Draw a table to illustrate different codes used for dull bit grading. Write a short note about each code.  <p style="text-align: center;"><b>OR</b></p> Calculate the open end and closed end displacement of a 2744 ft. long drill pipe of outer diameter 5 inch and inner diameter 4.276 inch.	10	CO5
Q 9	List four types of casings used in oil and gas wells and explain objectives? Draw a vertical well profile to show relative location of these types of casings.	10	CO3

**SECTION-C**

Q10	Explain in detail different uses of drilling fluids in oil and gas well drilling.	20	CO5
Q11	Describe in detail seven safety systems common in offshore drilling platforms.	20	CO4