

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, Dec 2021

Course: Drilling Engineering

Program: M Tech-PE

Course Code: PEAU 7001

Semester: I

Time 03 hrs.

Max. Marks: 100

Instructions: All questions are compulsory.

SECTION A

S. No.		Marks	CO
Q 1	List five major oil-producing regions of the world. Which region you think has most and least challenges in drilling operations?	4	CO1
Q 2	Calculate Hydrostatic pressure at the bottom of well bore of 12000 ft. measured depth, deviated by 30 degree from surface to bottom, and filled with mud of 11 ppg.	4	CO2
Q 3	Calculate total flow area in sq. inches across a bit which has five nozzles whose nozzle sizes are 8,8,8,9,9	4	CO1
Q 4	Calculate the mud discharge per minute from a triplex mud pump with liners of 12-inch length and 5-inch diameter. Pump is running at 50 strokes per minute.	4	CO2
Q 5	What are weighing agents in drilling fluids? Name four types of weighing agents used in drilling operations.	4	CO1

SECTION B

Q 6	Explain various functions of drilling fluid, which enable trouble free drilling operations.	10	CO4
Q 7	Explain the use of trip sheet during tripping jobs on an oil and gas rig.	10	CO3
Q8	With suitable diagram, describe four type of RAMs present in BOP.	10	CO2
Q 9	What are the objectives of running four sizes of casings in an oil and gas wells? Draw a vertical well profile to show relative location of these casings.	10	CO3

SECTION-C

Q10	Explain in detail different uses of drilling fluids in oil and gas well drilling. What are advantages and disadvantages of oil based mud over water based mud?	20	CO5
Q11	Describe in detail various stages of life cycle. What are activities associated with these stages of lifecycle of well?	20	CO4