Name: **Enrolment No:**	UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2020

Programme Name: B. Tech. APE (Gas) **Semester : III**
Course Name : Introduction to Petroleum Operations **Time : 03 hrs**
Course Code : PEAU 2002 **Max. Marks: 100**
Nos. of page(s) :

Instructions: 1) There are two sections. Section A for 60 marks and Section B for 40 marks.
2) Answer the questions in sequence.
3) Diagrams must be drawn wherever necessary.

SECTION A (6 X 10 = 60 Marks)
Answer all questions

S. No.		Marks	CO
1.	Write a short note on physical properties of Petroleum and three main stages of evolution of organic matter in sediments.	10M	CO1
2.	Why geophysical methods are necessary in oil exploration. Write two to three lines about each method.	10M	CO2
3.	Write a short note on a) BOP b) Viscosity measurement using Fann V G meter	10M	CO3
4.	What are the major components of well logging unit and logging set up? Discuss.	10M	CO4
5.	Classify separators and discuss the operation of a vertical separator in detail.	10M	CO5
6.	With a neat process flow diagram, explain the gas dehydration process.	10M	CO6

SECTION B (2 X 20 = 40 Marks)
Answer any two questions.

S. No.		Marks	CO
7.	a) Given the following data, compute the porosity of a cylindrical sample. The grain volume was measured in a two-cell Boyle's law porosimeter. Sample dimensions: Length = 4.00 cm, Diameter= 2.50 cm. Porosimeter Data: V_1=25.0 cc, V_2= 50.0 cc, p_1= 100.0 psig, p_2= 50.0 psig. b) Explain the determination of the laboratory measurement of grain or pore volume of a core sample using Boyle's law porosimeter. c) Classify bottom-coring methods. Explain.	(3+10+7) (20M)	CO4

8.	**a) Describe basic perforating methods, their advantages, limitations. Also, explain the features of corresponding perforating guns.** **b) What are different well stimulation operations? Explain.**	**10+10**	**CO5**
9.	**The fluid produced at the wellhead consists usually of gas, oil, free water, and emulsified water (water–oil emulsion). Discuss the methods to remove gas and free water from the well stream.**	**20M**	**CO6**