Name: **Enrolment No:**	

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

Course Name: B.Tech. APE-UP
Program: Formation Evaluation & Well Logging
Course Code: PEAU 3020
Nos. of page(s) 2
Instructions: All questions are compulsory

Semester: VI
Time: 3 hrs.
Max. Marks: 100

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	What is the reason behind Bell Shaped or Funnel shaped Spontaneous Potential (SP) curve seen on some thick reservoir.	**4**	**CO2**
Q 2	Write the steps of Sonic log tool calibration.	**4**	**CO4**
Q 3	Write the applications of K-Th cross plot analysis.	**4**	**CO3**
Q 4	Write short note on natural gamma ray origin.	**4**	**CO3**
Q 5	Provide the names of common well logs used in both open and as well as in cased hole well analysis.	**4**	**CO5**
	SECTION B **(4Qx10M= 40 Marks)**		
Q 6	Explain the following- a. Mud Logging b. MWD OR Write short notes on the following- a. Indonesian Equation b. Dual Water Model	**10**	**CO1**
Q 7	Analyze the different types of probe use in hold up measurement with the help of suitable diagram.	**10**	**CO5**
Q 8	Sketch and define the production logging in horizontal well.	**10**	**CO5**
Q 9	Explain invasion of resistivity profile in water bearing and oil-bearing zones by using oil base mud. Please draw appropriate diagrams to explain.	**10**	**CO3**
	SECTION-C **(2Qx20M=40 Marks)**		
Q 10	Explain the steps of porosity calculations with the help of log interpretation flow chart for mono-mineral lithological formation and	**20**	**CO4**

	draw a separate flow chart for saturation interpretation.		
Q 11	Explain the process of Shaly Sand analysis and its different steps, each step should be accomplished in specific order. Determine the effective water saturation (Sw) with the help of various methods OR What is Neutron log? Explain it with the help of its principle, neutron interaction with matter, neutron energy classification; and draw a rough neutron curve for hydrocarbon bearing sandstone formation that is sandwiched by shale.	**20**	**CO5**