


Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, December 2022			
Course: B Tech Program: FSE Course Code: HSFS 3032 (Safety in Petroleum Exploration)		Semester: V Time : 03 hrs. Max. Marks: 100	
<ul style="list-style-type: none"> ● Instructions: <ul style="list-style-type: none"> ✓ This question paper contains three sections. Answer all sections. ✓ No codes and additional support material is allowed for reference. ✓ Any data missing, may be suitably assumed and stated. ✓ Draw figures, wherever necessary to support your answer. 			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	You are the company man on a well being drilled. Well takes a kick. What will be your course of action?	4	CO2
Q 2	Under which circumstances an oil well flow in uncontrolled manner?	4	CO2
Q 3	“Wells are designed telescopically”, discuss your views to justify it.	4	CO2
Q 4	List out wide variety of <i>job prospects</i> for you in & around “Petroleum Exploration”.	4	CO3
Q 5	Explain key environmental issues during drilling process.	4	CO1
SECTION B (4Qx10M= 40 Marks)			
Q 6	Explain any four geophysical methods used for petroleum exploration.	10	CO1
Q 7	Draw a neat flow diagram of Mud Circulation System. Briefly explain the function of any four component available on this system.	10	CO2
Q 8	<p>A triplex pump is pumping a 14.5 ppg mud into the borehole and has a current circulating pressure of 1750 psi and a pump rate of 50 spm. Answer the following based on this data:</p> <p>1) If the pump rate is changed to 35 spm, calculate the new pump pressure (<i>Considering the mud weight remains constant</i>).</p>	5+5=10	CO3

	2) Calculate the new pump pressure if mud weight is changed to 13.2 ppg (assume pump rate remains constant).		
Q 9	List out the hazards associated during petroleum exploration process. Explain the risk associated.	6+4=10	CO3
SECTION-C (2Qx20M=40 Marks)			
Q 10	<p>The Deepwater Horizon oil spill (also referred to as the BP oil spill, oil leak, or oil disaster; the Gulf of Mexico oil spill is an industrial disaster that began on April 20, 2010, in the <u>Gulf of Mexico</u> on the <u>BP</u>-operated <u>Macondo Prospect</u> considered to be the largest marine oil spill in the history of the petroleum industry and estimated to be 8% to 31% larger in volume than the previous largest, the <u>Ixtoc-I oil spill</u>, also in the Gulf of Mexico. After several failed efforts to contain the flow, the well was declared, better than what it was, and sealed on September 19, 2010 Reports in early 2012 indicated that the well site was still leaking. The Deepwater Horizon oil spill is regarded as one of the largest environmental disasters in American history.</p> <p>You are required to highlight your views on the following points :</p> <ol style="list-style-type: none"> i. Volume and extent of oil spill ii. Efforts to stem the flow of oil iii. Basic approaches for removing the oil from the water iv. Environmental impact consequences v. Lesson learnt 	20	CO4
Q 11	Please refer the figure of “Rig Equipment Layout”. Different components are shown. Explain the use of any 10 rig components.	10x2=20	CO1

