


Name:			
Enrolment No:			
UNIVERSITY OF PETROLEUM AND ENERGY STUDIES End Semester Examination, December 2021			
Course: Artificial Lift Technology		Semester: V	
Programme: B.Tech APE UP			
Course Code: PEAU3023			
Time: 03 hrs.		Max. Marks: 100	
Instructions: All questions are compulsory. There is no overall choice. However, internal choice has been provided. You have to attempt only one of the alternatives in all such questions.			
SECTION A			
S. No.		Mark	CO
1	Differentiate between artificial lift and natural lift.	4	CO1
2	Illustrate the process to determine AOF from the IPR.	4	CO1
3	Define the aim of Artificial Lift Systems.	4	CO1
4	Diagrammatically describe the gas lift system.	4	CO3
5	a) For Gas Lift Wells depth is not a limitation. (T/F) b) Deeper gas injection depths can be achieved by using valves for wells with fixed surface injection pressures. (T/F) c) Continuous gas lift can be seen as an extension of the self-flow period of oil well. (T/F) d) Low gravity crude oil can't be produced by gas lift. (T/F)	4	CO3
SECTION B			
6	Discuss the procedure for selection of ESP.	10	CO3
7	Describe the working of PCP.	10	CO4
8	Illustrate the Overview of the Techniques for Selecting Optimal Artificial Lift Methods. OR Describe the primary, secondary and tertiary recovery phase of an oil field.	10	CO1
9	Enumerate the general Factors Effecting SRP Selection	10	CO2
SECTION C			
10	With the help of diagram describe the unloading sequence. OR The following geometry dimensions are for the pumping unit C-320D-256-120: d1= 111:07 in. d2 = 155 in. c = 42 in. h= 132 in. Can this unit be used with a 2 1/2 -in. plunger and 3/4, 7/8, 1-in. tapered rod string to lift 22 API gravity crude (formation volume factor 1.22 rb/stb) at a depth of 3,000 ft? If yes, what is the required counter-balance load?	20	CO3

11	<p>The following geometric dimensions are for the pumping unit C-320D-213-86:</p> <p>d1 =96.05 in.</p> <p>d2 =111 in.</p> <p>c =37 in.</p> <p>c/h= 0.33.</p> <p>If this unit is used with a 2 1/2 -in. plunger and 7/8 -in. rods to lift 25 8API gravity crude (formation volume factor 1.2 rb/stb) at depth of 3,000 ft, determine</p> <ol style="list-style-type: none"> The maximum allowable pumping speed if L=0.4 is used. Expected maximum polished rod load. Expected peak torque. Desired counterbalance weight to be placed at the maximum position on the crank. 	20	CO3
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