

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Course: Well Intervention and Stimulation

Semester: II

Program: M Tech Petroleum Engineering

Course Code: PEAU7008

Time 03 hrs.

Max. Marks: 100

Instructions:

SECTION A

S. No.		Marks	CO
Q 1	State whether following statements are True OR False I. Workover operation is done in both onshore and offshore wells. II. Slick line is run to measure petro physical properties of subsurface rocks. III. Acidizing is a well stimulation treatment used to improve the permeability of reservoir rocks. IV. Gold and silver are more corrosive than iron and steel.	4	CO1 CO4, CO3
Q2	With suitable diagram, explain the difference in shape and function of wireline ram and blind shear ram of slick line BOPs.	4	CO4
Q3	List the four applications of coiled tubing in workover operations.	4	CO4,
Q4	Name four types of mechanical jobs performed by workover rigs.	4	CO2
Q5	Define in brief what is squeeze cement? List three types of special cements used for cement squeeze jobs.	1+3	CO1, CO2

SECTION B

Q 6	Explain what is backpressure on formation? Define how it is generated and what are the remedies to improve production in such scenario.	10	CO1, CO4
Q7	Explain the difference between pour point and cloud point of crude oil? Explain the importance of pour point in defining various characteristics of crude oil?	10	CO1, CO4
Q8	Define the properties of Paraffin and Asphaltene material found in crude oil? Describe the four differences in physical properties of paraffin and Asphaltene.	10	CO1, CO3
Q9	What is difference between matrix and fracture acidizing? Draw a curve to show the relation between acid injection rate and pumping pressure.	10	CO1, CO4

OR

Distinguish between sweet, sour and oxygen corrosion? Describe various techniques used in oil and gas industry for corrosion control?

SECTION-C

Q10	Explain the difference between wireline logging and wireline for well intervention. What are desired properties of metal used for Slickline wire? Describe in detail applications of any five tools run with Slickline?	5+5 +10	CO1, CO4
Q11	Describe in detail and wherever possible with suitable diagram, various components of coiled tubing unit. Describe the function of each component. What are the advantages of coiled tubing unit over work over rig? Illustrate main features of debris catcher and under reamer tool used with Coiled tubing. <p style="text-align: center;">OR</p> With suitable diagram, explain triaxial loading of subsurface rocks. Explain the mechanics of hydraulic fracturing? Explain why fractures are developed parallel to well bore axis during hydraulic fracturing?	20	CO4, CO2, CO3