

Name:	
Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
Online End Semester Examination, January 2021

Program: B-Tech APE –GAS	Semester: III
Course: Petroleum Exploration	Time: 180 minute (3 hour)
Course Code: PEGS-3013	Max. Marks: 100
Number of pages: 02	
Note: Online submission	

SECTION-A (5x6=30)

Sl. No.	Briefly Describe following (Attempt all)	Marks	CO
Q1	Write a short note on digitization process of an analog signal and its application in signal processing.	5	CO1
Q2	What is the difference between primordial and radiogenic Helium and its application in geochemical hydrocarbon exploration?	5	CO3
Q3	Define Paramagnetic, Diamagnetic and Ferromagnetic minerals and its application magnetic geophysical survey for hydrocarbon exploration.	5	CO4
Q4	In magneto telluric survey what is the source of high frequency signal greater than 1 Hz and what is its application for subsurface rock type interpretation and hydrocarbon exploration?	5	CO4
Q5	Describe the mechanism of micro seepage from a hydrocarbon trap.	5	CO3
Q6	Why P-wave can propagate through both solid and liquid whereas S-wave can propagate only through solid but not in liquid?	5	CO2

SECTION-B (10x5=50)
(Attempt all)

Q7	Write a comprehensive essay on different methods of hydrocarbon microseepage detection onshore.	10	CO3
Q8	Write a note on biological activity in soil profile and its importance in geochemical petroleum prospecting?	10	CO3
Q9	What is the source of geothermal heat for shallow crustal level and its application in hydrocarbon source rock maturation?	10	CO5
Q10	What are the factors that govern mobility of Uranium in soil profile? How mobility of Uranium is helpful for geochemical hydrocarbon exploration?	10	CO3
Q11	For a gravity geophysical survey what are the corrections that raw gravity data needs to be gone through before any interpretation about hydrocarbon exploration?	10	CO2

SECTION-C (20x1=20)
(Answer any one)

Q12	In reflection seismic signal processing describe the process of migration for horizontal bed, dipping bed and folded surface and its implication in interpreting seismic profile.	20	CO6
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Q13	What is the importance of cross-over distance in refraction seismic survey and its application in seismic data acquisition, processing and interpretation?	20	CO6
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